JOURNAL
OF THE
AMERICAN VETERINARY MEDICAL ASSOCIATION

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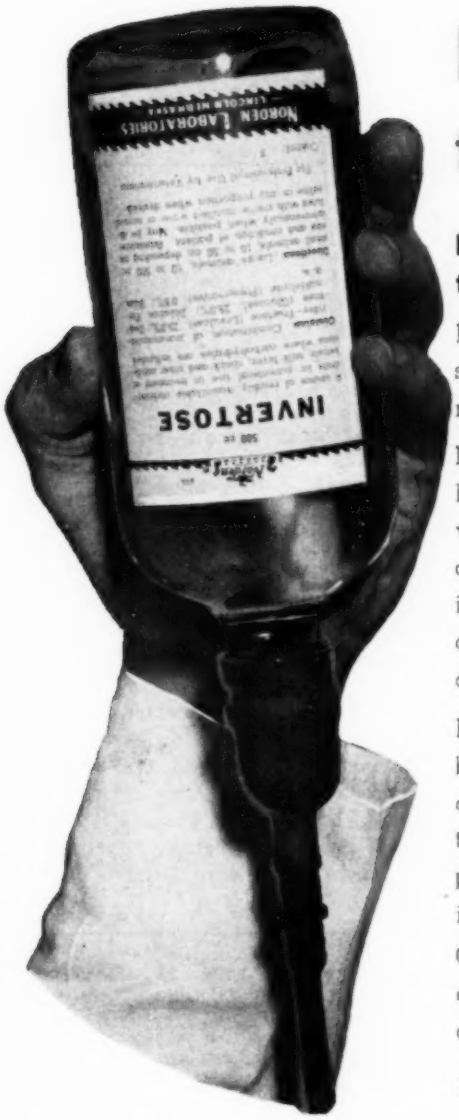

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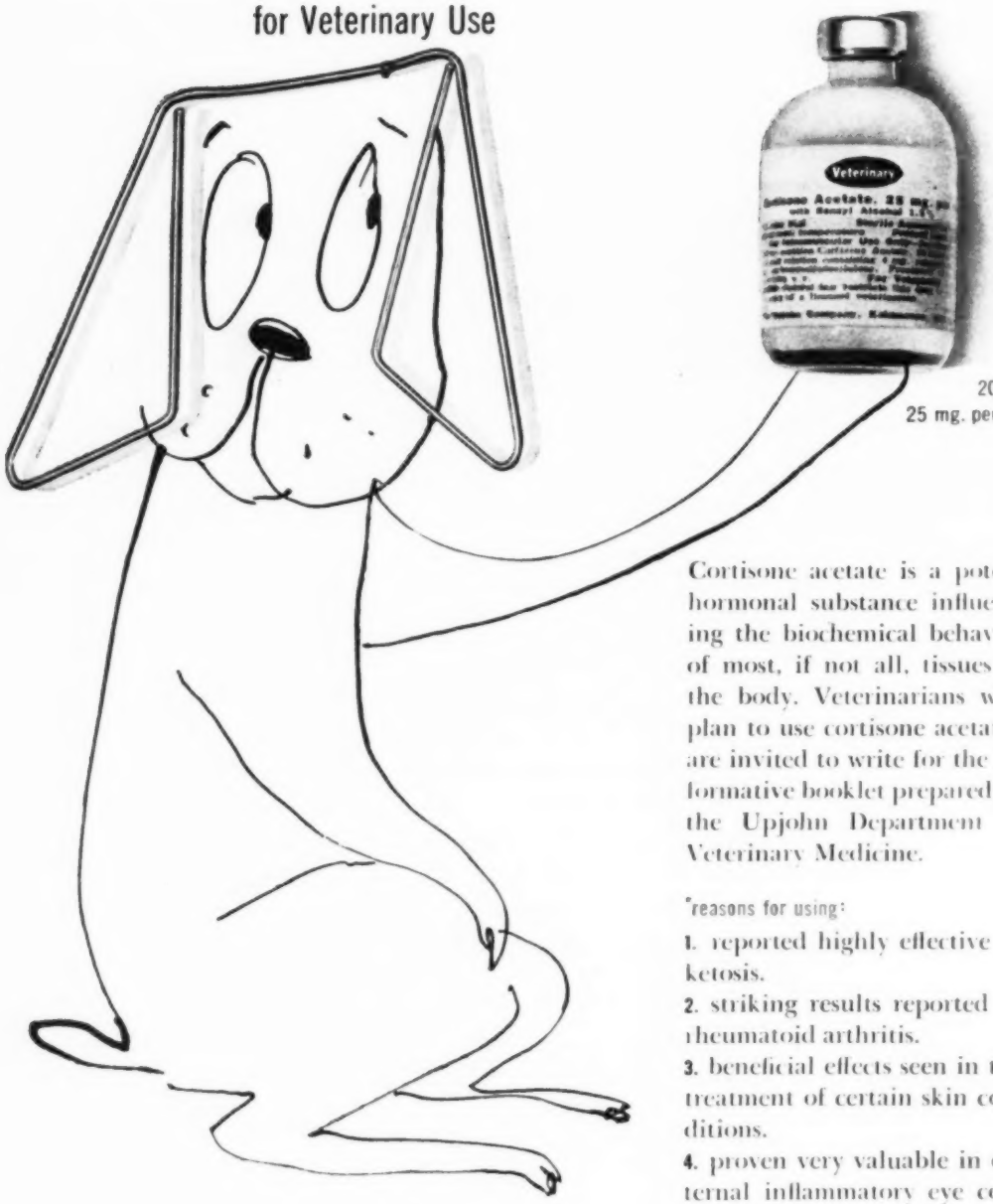

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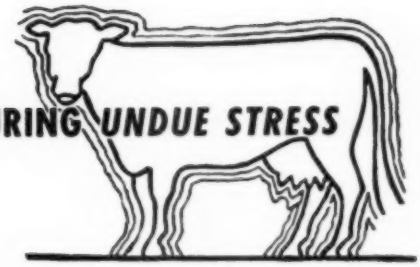

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AVMA ☆ Report

Veterinary Medical Activities

✤ Dr. W. Webster, director, Division of Animal Industry, Department of Agriculture and Stock, Brisbane, Australia, was a visitor at the AVMA office in October. He had been in the United States for about two months visiting points of veterinary interest.

★ ★ ★

✤ President A. H. Quin, Editor-in-Chief W. A. Aitken, and Assistant Executive Secretary Kingman attended the meeting of the U. S. Livestock Sanitary Association in Omaha, November 10-12.

★ ★ ★

✤ Five French and two Belgian officials visited the AVMA offices during October. These men are in the United States to study practices and regulations related to sanitary milk production, processing and distribution, and to the prevention and control of animal diseases, tuberculosis, brucellosis, and mastitis. The group was composed of both veterinarians and milk sanitarians.

★ ★ ★

✤ Committees meeting at Association headquarters during November were — Motion Pictures and Television, November 15; Committee on Ethics, November 19; Committee on Veterinary Supply Problems, November 20; Council on Education, November 21 and 22; Committee on Scientific Exhibits, November 28; and Research Council, November 28 and 29.

★ ★ ★

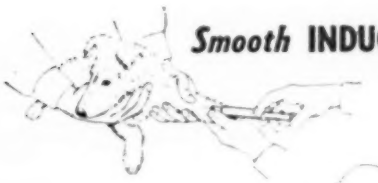
✤ The AVMA Emergency Advisory Committee met in Washington, November 18. Assistant Executive Secretary Kingman attended the meeting representing the central office staff.

★ ★ ★

✤ Three veterinarians from Germany, Drs. Kurt Hubner, Karl Ohly, and Carl E. P. Schultz, visited the AVMA offices during October. These men were in the United States to observe our methods of control and eradication of livestock diseases and sanitary inspection of meat and dairy products.

★ ★ ★

✤ Twenty-five officers of the Army and Air Force Veterinary Corps attending the Dairy and Meat Hygiene School at the Quartermaster Depot, Chicago, visited Association headquarters on Oct. 13, 1954. Members of the AVMA staff spoke to the group on the organization and activities of the Association and other professional matters.



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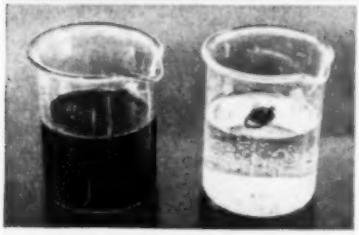

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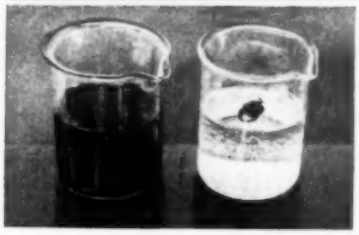

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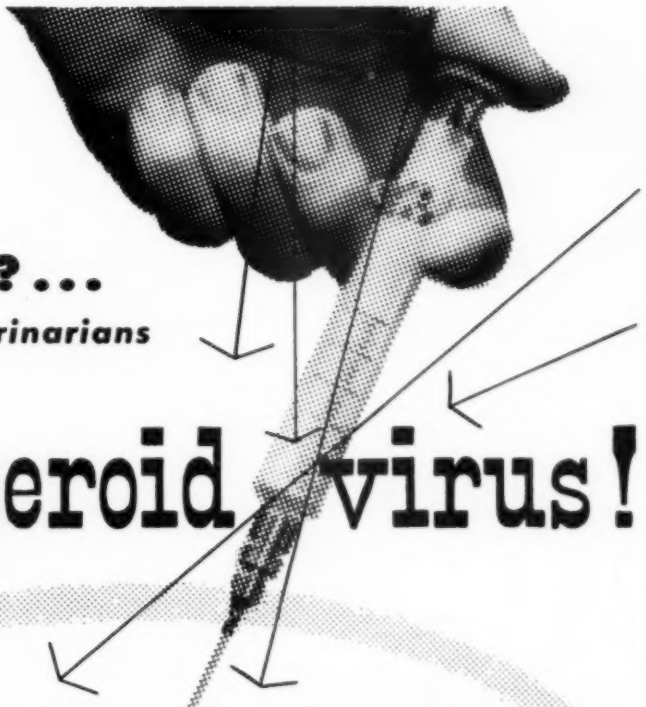

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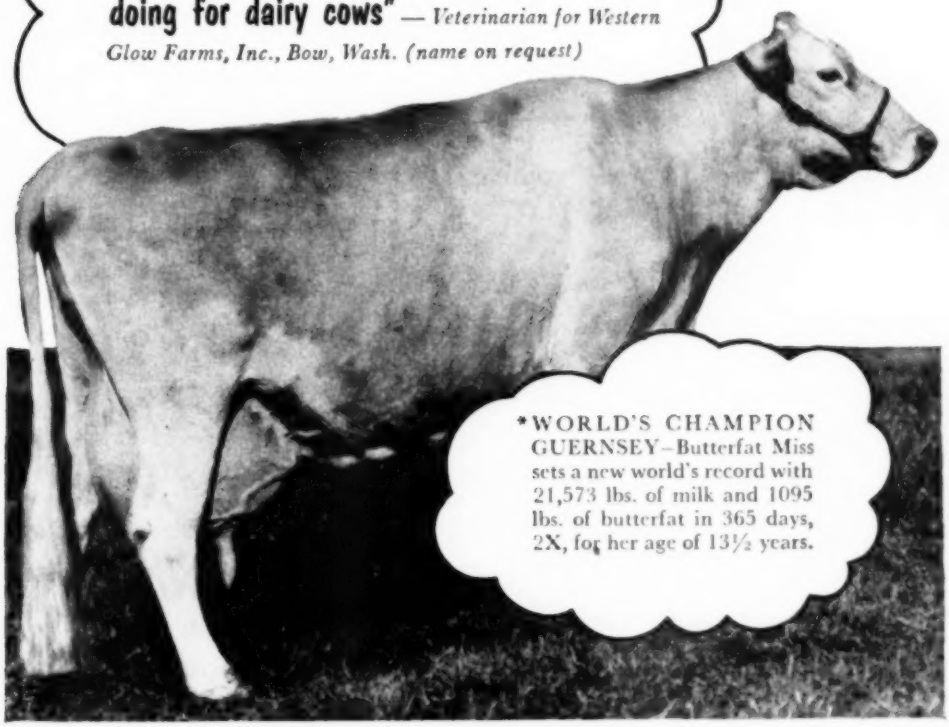

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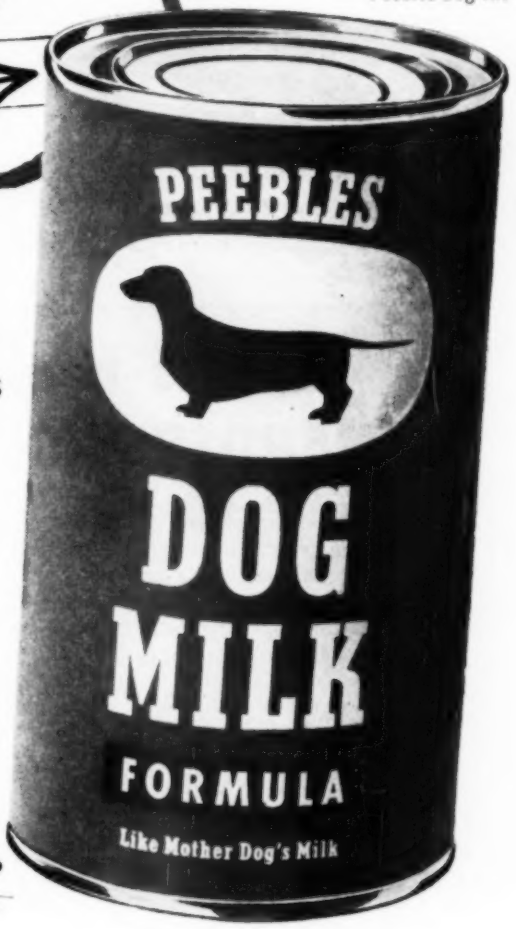

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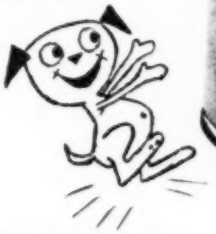

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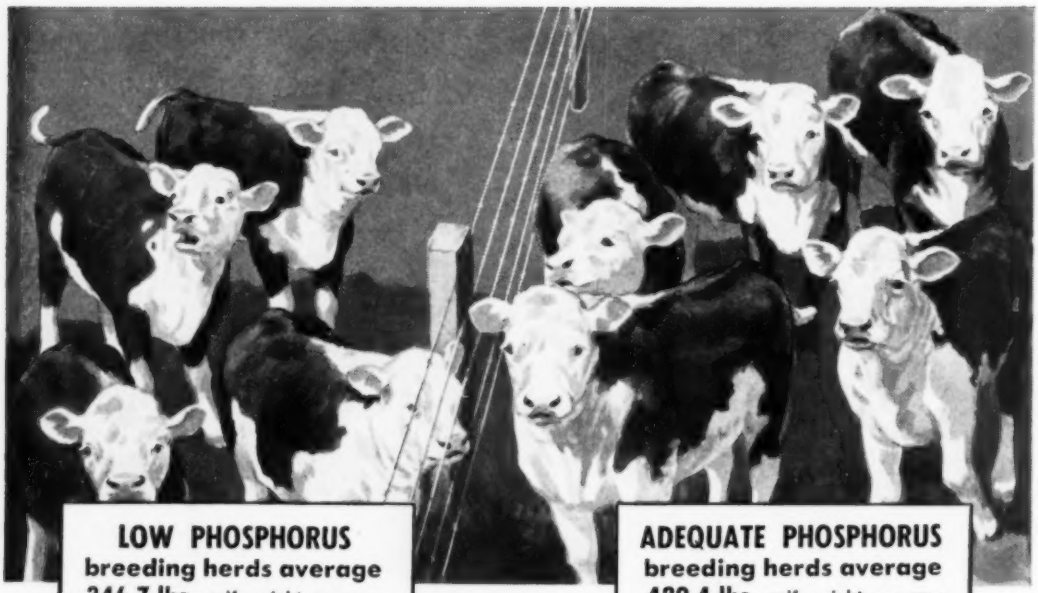

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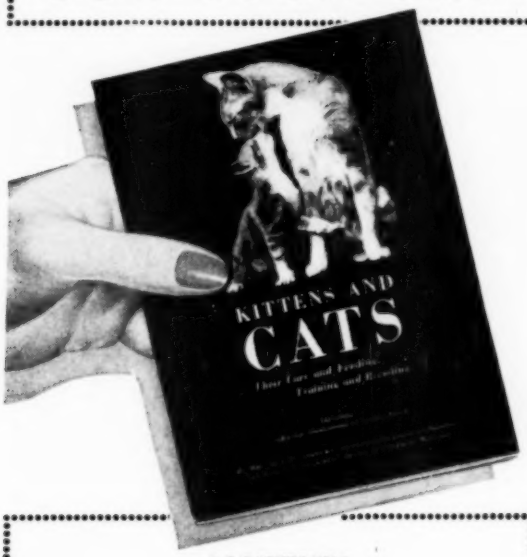

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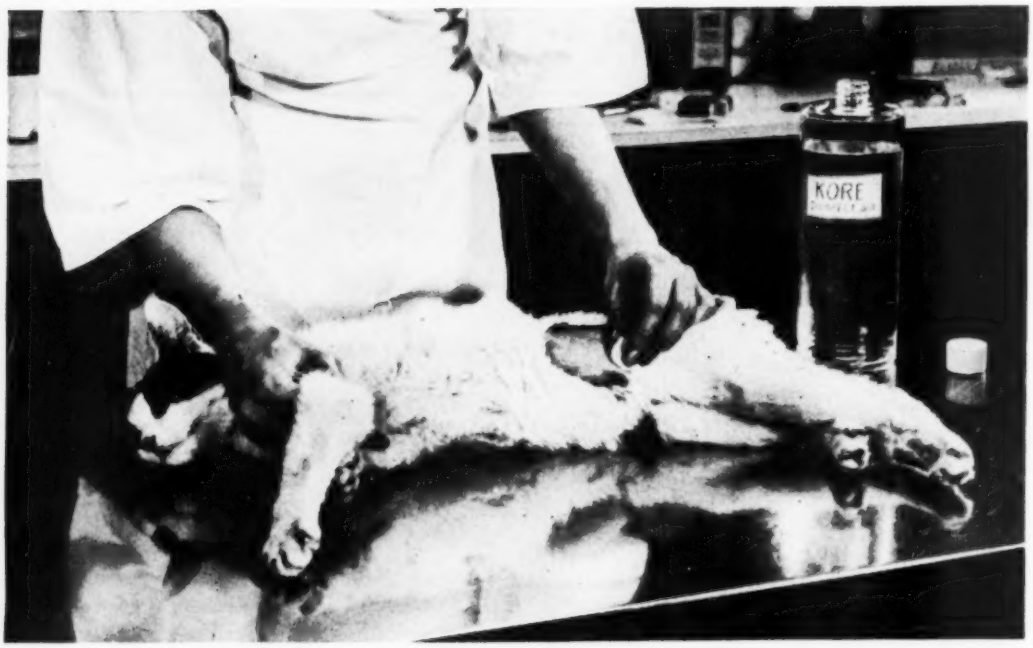

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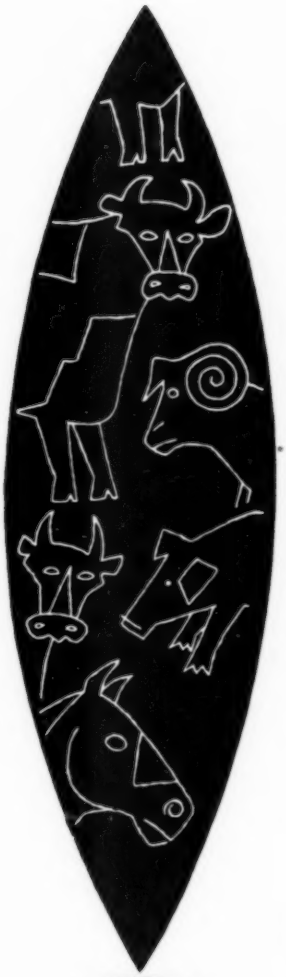

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VOL. 125 DECEMBER, 1954 No. 933

The Responsibility of State and Federal Agencies in the Improvement of Poultry Vaccines

EDWIN P. JOHNSON, D.V.M., Ph.D.; ROBERT P. HANSON, Ph.D.;
ARNOLD S. ROSENWALD, D.V.M., M.S.; HENRY VAN ROEKEL, D.V.M., Ph.D.

Madison, Wisconsin

IN 1952, less than ten years after the disease was first recognized in this country, approximately 450 million doses of Newcastle disease vaccines were sold in the United States.

Unsatisfactory results, which have continued to follow the use of a significant proportion of these vaccines, revealed the inadequacies of the present program of testing and licensing. This is illustrated by several extracts from reports given at the 1953 meeting in Chicago of the Interregional Advisory Committee on Newcastle Disease and Other Respiratory Diseases of Poultry. "We were unable to demonstrate chronic respiratory disease in several commercial vaccines because of the presence of penicillin-resistant contaminants." "Bacteria were isolated even from the vaccine diluent." "Pullorum organisms were isolated from vaccines." "Outbreaks of pullorum occurred in vaccinated flocks that were previously clean." "Vials of live vaccines obtained on the market had virus titers ranging from 10^2 down to no detectable titer." "A killed vaccine was found to lack immunogenicity."

The leading role played by experiment stations at this meeting in defining the deficiencies of vaccines is a logical one since almost all of the Newcastle disease vaccines now produced in the United States are produced with strains isolated and characterized by research workers in the experiment stations (Beaudette, Beach, Johnson, Brandly, Jungherr, Hitchner, Moses, and Van Roekel). It is not surprising that the technical committees, composed of men from the experiment stations, are concerned about minimum standards to insure a reasonably satisfactory performance of virus vaccines.

Creation of technical committees for the study of Newcastle disease in the four regions of the United States—North Central, Northeastern, Southern, and Western—was an important step in state and federal cooperation. It recognized the lack of, and need for, coordinated planning of research and the deficiencies in the exchange of research information which have resulted in repetition, duplication, and also neglect of broad areas of knowledge and of important problems. The appointment of a subcommittee to prepare recommendations for improving standards for Newcastle disease vaccines was another step in the search for closer and more productive cooperation.

This paper is a result of subcommittee efforts. It attempts to analyze the validity of the basis of the current regulations and rules, it proposes basic changes, not necessarily in the specific regulations, rules, or requirements, but in the methods of promulgating them. Suggestions are made which it is felt would benefit the livestock industry most by laying a more solid, realistic, and factual foundation for testing the relative worth of older products and especially for assessing the need for, and the merit of, new products.

The people and their legislative bodies recognized the need for regulation of the production and sale of vaccines for animals about 1911. In 1913, Congress provided for federal inspection, regulation, and licensing of all concerns engaged in producing, for interstate sale, vaccines intended for animal use. A similar law providing for regulation of human vaccine production had been passed in 1902. The Bureau of Animal Industry of the U. S. Department of Agriculture, which was charged with the responsibility for regulation of animal vaccines, delegated this responsibility in 1920 to a special division, Virus-Serum Control, now the Biological Products Section of the Animal Inspection

This report was prepared by the Interregional Subcommittee on Vaccine Evaluation of the Interregional Advisory Committee on Newcastle Disease and Other Respiratory Diseases of Poultry and in consultation with members of the regional committees. Present members of the subcommittee are: Drs. E. P. Johnson, Blacksburg, Va.; R. P. Hanson, Madison, Wis.; A. S. Rosenwald, Davis, Calif.; and H. Van Roekel, Amherst, Mass.; former members are: Drs. E. R. Doll, Lexington, Ky.; and S. B. Hitchner, Madison, Wis.

and Quarantine Branch of the Agricultural Research Service of the U. S. D. A.

LICENSING NEW VACCINES

The applicant who wants to manufacture and sell a vaccine submits to the Biological Products Section a protocol which describes his product, the strain of infectious agent used, the methods of manufacture, and the procedures for testing. Test results, showing the potency of his product, are given with evidence for the adequacy and the harmlessness of the new product. Presently, the data provided by the manufacturer is the basis for justifying the request for a license for the product. On the basis of this evidence, and information from other sources, a license may be issued by the federal agency. The Biological Products Section is in a position to do only limited testing of some of the proposed products and does not require testing by an independent agency. The records of the tests of safety and potency of each lot of vaccine performed by the licensed producer are examined. All tests, including those supporting claims of efficacy which are a part of the outline of the product, are regarded as confidential by the Biological Products Section. Thus, the only impartial means available to state groups who want a critical evaluation of the merit of the product is for them to conduct a trial of the product. The reason for the confidential status of production procedures is clear, but since some of the testing data will be used in advertising, it is difficult to see why the tests of efficacy should be considered confidential.

Four types of immunizing agents have been developed for Newcastle disease. Twelve companies are now engaged in the production of Newcastle disease vaccines for interstate sale and an unknown number of companies prepare vaccine for use within the boundaries of the state of manufacture. Knowingly or unknowingly, some of this vaccine, produced without federal license or supervision, is bootlegged across state borders.

The chief veterinary regulatory official of each state has authority to take measures necessary to suppress diseases harmful to livestock and, in some states, to regulate the sale of biological products. The manufacture is thus controlled by a federal agency, while 48 state agencies control the sale. Only a small part of the information studied by the Biological Products Section as a basis for licensing the manufacture and sale of a vaccine is available to state regulatory officials, who may permit or ban its sale on the basis of fragmentary or unsupported claims. On the other hand, this same official may have access to the results of studies the Biological Products Section has not seen. Federal and state experiment stations, which may have facilities for testing of vaccines independently, are separate from the controlling agencies. Their findings may never reach federal and state regulatory officials, or at least not until the findings are formally published, often after a lapse of a year or more.

Licensing new products appears to be more a matter of expediency than means of satisfying a need. The specific purposes of vaccines are to lessen susceptibility to, or decrease the severity of, a specific disease; yet often prevention of mortality alone is regarded as proof of their value. Tests of the degree or completeness of immunity and its duration are costly and time-consuming, especially in the field, but such tests are all-important for the protection of the livestock or poultry owner to determine the real value of a given biological product. Not to be discounted either are the tests which would determine the safety of the product in the field.

For example, death loss is only one of the costly effects of Newcastle disease. Stunting growing birds and, especially, impairing egg production and quality with little or no mortality are frequently the most serious causes of economic loss. Are the tests which "prove" the value of the vaccine run under carefully controlled conditions with frequent determination of serological and other response of the test birds? Are they designed to disclose the true merit or lack of merit of the product in preventing drop in egg production, accompanied by slight or even no respiratory symptoms? Often they are not.

Infectious bronchitis is a highly contagious disease occasionally causing serious mortality in young chicks, decreasing the appetite and, perhaps, the rate of gain in growing birds but frequently producing a prolonged deleterious effect on both the egg production and egg quality in laying birds. For years, the virus causing the disease has been willfully spread among growing chickens to stimulate immunity before egg production starts, thus preventing infection in birds of laying age. Recently, bronchitis vaccines, represented as "mildly virulent" strains, have been produced and the producers have asked for, and been granted, licenses. Only a limited number of protocols have been made available, but it is known that admittedly inadequate data have been provided on the value of some of all for protecting laying hens. Many authorities believe that the main usefulness of an immunizing agent against bronchitis is for laying birds—yet tests on millions of "meat" birds are submitted in support of the worth of these "vaccines" for immunizing potential layers.

Data obtained by vaccinating many farm flocks in one or a dozen states without plan,

without adequate supervision, without controls, and frequently without any objective criteria for evaluation amounts to little more than a search for testimonials. Yet such information is submitted as evidence of the value of the vaccine.

Requirements for Vaccine Production

Before taking up specific recommendations, it will be worthwhile to outline the production of a chicken embryo-propagated vaccine.

Plant and Personnel.—A physical plant equivalent to a research laboratory and under competent professional supervision should be required for production. The vaccine seed should be as uniform as possible and free of viral or bacterial contaminants. The characteristics of the seed should be known so that contamination with another strain or with a more pathogenic mutant of the same virus can be detected before the virus vaccine reaches the market. The fertile eggs used in vaccine production should be from flocks of chickens known to be free of disease, particularly pullorum disease and tuberculosis. The general health of flocks should be determined by regular inspection and, if respiratory infection occurs, use of the eggs should cease. It is preferable that the eggs be free of specific antibodies and of residual antibiotics from the feed.

Production.—Embryos are prepared, inoculated, reincubated, and harvested. The virus-rich materials are treated according to a defined protocol, which may include grinding followed by removal of coarser materials, then perhaps the addition of preservatives (antibiotics) and stabilizers (gums or milk solids). For killed vaccines, the virus is inactivated by formalin, crystal violet, or ultraviolet irradiation and an adjuvant, such as aluminum gel, is added. Living virus vaccines are usually lyophilized in vials or in bulk and then dispensed into vials. Vials are sealed in vacuum or dry nitrogen. Killed vaccines are bottled as fluids.

The Biological Products Licensing Section specifies standards for the physical plant, materials used, supervising personnel, and procedures followed only insofar as to require properly qualified personnel and to eliminate practices known to be dangerous, as well as inadequacies in the physical plant. This negative approach, while cumbersome, is probably the only one that can be applied in a competitive field.

Test of Products.—The efficacy of the product is tested by the producer to verify the claims presented at the time of the request for a license to produce it. Safety and potency determinations are made on each serial of the finished product, also by the producer.

Proposed Changes in Potency and Safety Tests

The specifications for testing especially have occupied the attention of the technical committees on Newcastle and other respiratory diseases. A positive approach can be applied to obtain better and more uniform vaccines. The committee's 1952 recommendations, with some changes consistent with subsequent research findings, are presented in the following discussion.

The Problem.—When a serial of vaccine is ready for the market, four questions should be asked: (1) Will the vaccine itself produce death or other serious reaction in a representative group of nonimmune chickens? (2) Does the vaccine contain a contaminant that is pathogenic for fowl? (3) Will the vaccine immunize birds so that they can resist natural exposure to the virus? Will the vaccinated birds resist all major damaging manifestations of the disease? (4) Is the immunogenicity of the vaccine retained for a reasonable time?

Three individuals are vitally interested in the answers. They are the vaccine producer, the regulatory official, and the livestock owner.

The producer knows that, even in the best establishments, equipment failures, human error, and biological variation of the virus are possible and can result in a substandard, or even a dangerous, product. His company can be discredited and subject to lawsuits. A rigid testing program is his major safeguard.

The regulatory official of the Biological Products Section is vested with authority, as the agent of the federal government, to award licenses for production of biological products. It is an obligation of the government to guard the public against dangerous products or products of little or no value. Failure to revoke or suspend the licenses of companies that produce inferior or dangerous vaccines is a betrayal of public trust. An adequate testing program is the major important basis upon which the regulatory official relies in his handling of this public trust.

The regulatory officials of the state and federal governments, extension workers in animal diseases, and practicing veterinarians who are concerned with the control of animal diseases in the United

States must have confidence in biological products which they recommend or employ. It is vitally important that the container label bearing "United States Veterinary License" means a satisfactory and safe product. The hazards of unsupervised production of biological products, and particularly the "bootleg vaccine," are obvious to these men. An educational campaign to convince the farmer of these dangers must finally await the establishment of, and compliance with, adequate standards for all licensed biological products.

The livestock owner suffers loss when substandard vaccines are marketed; loss because his animals were not protected and loss from diseases introduced by the vaccine. An adequate testing program must protect him against these hazards.

The question has been asked and the need for asking it made clear: Do we know how to obtain accurate answers? The honest and full answer is "no." Although empirical tests sometimes must be used when a program is being initiated, they should be supplemented or replaced by tests shown by experiments to be valid. More experimental data are needed.

SAFETY TESTS

Let's take the first question. Will the vaccine produce death or other serious reactions in a representative group of chickens? An example will illustrate the problem clearly. A serial of living Newcastle disease vaccine under test may consist of 10 liters of embryo-propagated virus material lyophilized and dispensed into 2,000 vials each containing 100 doses and from 10 million to 1,000 million infective or antigenic virus units. One vial is reconstituted; 20 chickens are given a total of 1 ml. of this vaccine by wing-web puncture. It should be emphasized that 20 or 200 chickens, no matter how selected, are a poor sample of 200,000 to 1,000,000 chickens of various ages and breeds, receiving many rations under differing climatic conditions and located in the four corners of the United States, which will receive the serial of vaccine. The sample tested is 1/5 of 1/2,000 or 1/10,000 of the volume of the serial. To be readily detected, there would have to be much more than 10,000 infective units of a contaminant in the entire serial even if it were a highly pathogenic so-called "exotic" type of Newcastle disease virus.

We must admit that massive contamination, *i.e.*, substitution of a challenge seed for a vaccine seed or malicious introduction into a vaccine line of several embryos infected with a pathogen, are remote possibilities and situations that can be readily detected. But the pathogenic mutant which may occur as only 10,000 infective units in an entire serial containing 10^{11} to 10^{12} virus units under present tests would be undetected. There is evidence that this has occurred.

The problem of detecting such mutants or contaminants may be expressed:

$$\frac{\text{ml. of reconstituted vaccine in a serial}}{\text{size of test dose in ml. x number animals inoculated}} = \text{Number of contaminants not detectable by the test}$$

or stated more simply:

$$\frac{\text{Population}}{\text{Sample}} = \text{CND}$$

The accuracy and sensitivity of a safety test is increased by increasing the size of the test dose or the number of animals inoculated. An absolute test of safety would be achieved only by a prohibitive test, one of the entire serial. A practical standard must be devised based on a knowledge of the biological characteristics of the virus, the variation of the host, and the principles of statistics.

Suppose it were decided after experimental exploration (and this needs study) that in an adequate test the contaminants not detectable (CND) should number less than 1,000 per serial. The accuracy of the first example of a safety test would be calculated:

$$\frac{10{,}000}{0.05 \times 20} = 10{,}000 \text{ an excessive CND}$$

Two hundred chickens would be required for a test to give a CND of 1,000. But if 1 ml. of virus were used intramuscularly, rather than 0.05 ml. in the wing-web, 10 chickens would be enough to define a CND of 1,000. All of the present vaccines, living or killed, should be able to pass such a safety test readily. Perhaps it should be more rigid.

TESTS FOR CONTAMINATION

Bacterial contamination would be detected by testing a 10-ml. sample of the reconstituted product with 1 ml. dispensed into each of ten containers holding 50.0 ml. of thioglycollate medium. A dilution of at least 1:50 of the vaccine in the medium is frequently necessary to nullify the bacteriostatic effect of substances added to the vaccine. If antibiotics are used, even this dilution is insufficient. Perhaps "millipore"

filters should be tried. Incubation should be at 35 to 37 C. and microscopic examination and subcultures on solid mediums done after seven days. The healthy chicken can readily tolerate the nonpathogenic bacteria usually contained in virus vaccines. However, until a practical procedure for differentiating pathogenic and nonpathogenic bacterial contaminants is devised, thus assuring exclusion of pathogens, reduction of the total bacteria count is the simplest and also the best procedure. Bacteriologically sterile products are being produced and should be required.

Detection of contamination of the vaccine by other viruses is a difficult problem and one for which a satisfactory procedure is not employed. Rubbing 0.1 ml. or 0.3 ml. of the vaccine, as now suggested, into a scarified area on the comb of 3 Newcastle disease-immune chickens is not an adequate test for contamination of the vaccine with fowlpox virus, unless, of course, a fully infected pox membrane is introduced in the vaccine, e.g.,

$$\frac{10{,}000}{0.1 \times 3} = 33{,}000 \text{ CND}$$

Instead of 3 chickens, 100 would be required for a CND of 1,000. Another possibility would be to use 10 chickens and to rub 1 ml. into an unfeathered or defeathered area employing a scarifying device that would insure 100 minute abrasions. Research information is not available and is needed.

The same questions should be asked about contamination of Newcastle disease vaccines with laryngotracheitis virus, bronchitis virus, and chronic respiratory disease agents. Larger inoculums or more birds, or both, will be needed if practical information is to be obtained. In some instances, inoculations of larger quantities are biologically and physically impossible. If the sample is not large enough to be statistically representative, one may ask why test at all; why not depend upon the safety test to detect the gross contamination? More research on what constitutes adequate tests is needed to define a workable but adequate basis.

Proposed Potency Test.—Testing the capacity of the vaccine to stimulate specific resistance to challenge begins with the selection of adequate numbers of nonimmune chickens for a valid test, a suitable challenge strain, a suitable route of challenge and, most important, a practical design for the test. For comparative purposes, the procedure must be standardized. The proposed test may fulfill the requirements.

Since we wish to know whether the vaccine will induce a resistance to field challenge, we may ask, "Why can't we expose the vaccinated birds to infected ones?" The complexity of such a procedure and the difficulty of reproducing a uniform challenge of successive lots of birds are the principal deterrents. There is logic, however, in simulating the field situation if a controllable test can be devised.

Natural challenge to Newcastle disease is believed to be often by aerosol and the natural infecting dose is known to vary from a few particles of virus to many thousands. Thus, in setting up the test, we select a challenge strain of predictable pathogenicity, employ decimal dilutions of the challenge virus, and introduce the infection by the respiratory route, *i.e.*, 0.1 ml. intratracheally. The chickens should be of known age and free from disease. The principals (vaccinated birds) receive the vaccine three weeks prior to challenge and are similar to the controls (unvaccinated birds) otherwise. The test design and results given in table 1 are similar to the ones now used in evaluating other commercial vaccines. The design has already been tried with Newcastle disease vaccine.

TABLE 1—Potency Test Design and Results

	Vaccinated animals (principals)			Unvaccinated controls		
Groups	Dil. chall. virus	No. in group	No. survived	Dil. chall. virus	No. in group	No. survived
1	10^{0}	10	10	10^{0}	10	10
2	10^{-1}	10	9	10^{-1}	10	8
3	10^{-2}	10	6	10^{-2}	10	4
4	10^{-3}	10	2	10^{-3}	10	0
Totals	....	....	27	....	....	22

The vaccinated birds in each group receive 100 times as much virus as in the comparative control. The number of survivors among the vaccinated birds (27 in table 1) should, nevertheless, exceed the number of survivors among the controls (22 in table 1) if the vaccine is to be considered satisfactory. The excess of vaccinated survivors over control survivors or "survivor index" (5 in table 1) is a measure of the protective power of the vaccine.

Many of the committee considered the example

to represent a very poor vaccine. The authors believe that experiments on duration of immunity would show that to be the case. However, present minimum standards require only 75 per cent survival of vaccinated birds and 75 per cent death of controls and it should be noted that the 10^{-5} dilution of virus killed all of the susceptible controls and only 1 of the 10 vaccinated birds. This is a 90 per cent survival versus 100 per cent mortality. It should be remembered that this test shows only that this vaccine has antigenicity and can protect against fatal infection for a short period at least.

At least once a year a serial of vaccine selected at random from the production of each manufacturer should be tested at the time of expiration and it should pass the potency test established for the vaccine.

The tests cited are proposed as examples. Others of the same type should be developed and their validity investigated. The tests proposed should be based on research findings and statistically sound procedures. Their acceptance should follow proof, by investigation, of their validity.

SUMMARY

Satisfactory vaccines will require increased effort by production, regulatory, and research groups. The exploitation of recently developed vaccines has put research and control agencies in a particular difficult and vulnerable position. The traditional method of communicating research findings has been by publication in scientific journals. This method has failed to keep regulatory agencies abreast of new developments and to satisfy the tempo of modern methods of commerce.

Several suggestions or proposals appear appropriate:

1) Better exchange of information might be achieved by means of a news sheet and by conference. Better cooperation between the research and regulatory branches of the state and federal governments might be attained by the creation of a representative advisory group to the Biological Products Section that would meet semiannually. Perhaps representatives of the Regional Technical Committees and Biological Products Section could be the working committee. Prompt distribution of results of research and especially of regulatory matters, pending and acted on, should be widespread and should include experiment stations as well as regulatory groups.

2) Present standards for virus vaccines might be increased. The Biological Products Section should be authorized to increase its staff facilities so that it might adequately and regularly test randomly selected serials of Newcastle disease vaccine and other licensed vaccines. Its staff should include a statistician, virologist, and bacteriologist. Its facilities must include a laboratory with animal isolation units.

3) A program for revision of standards should be established. Safety and potency tests now employed should be studied and evaluated by statistical and biological methods so that they might be improved. Changes should be subject to further modifications. Intensive research, specifically designed to improve the tests and give validity to the results, should be initiated and standards should be designed accordingly.

4) A program for evaluating new products should be established. There is great need for study and prompt action to provide sound bases and policy for licensing new products of proved value and refusing licenses for those which have little or no merit or for which there is no real need.

5) The financing of this program could be shared. To get better vaccines, we must have more research, more extensive education, and better production control. It will take additional expenditures by state and federal governments. It is only proper that biological industry shoulder a proper share of the load—perhaps by creating a national foundation fund for research on animal biological products. In terms of a healthier and more profitable livestock industry and in the interests of improving public relations, the cost would be justified.

The Business Side of Medicine

Putting efficiency into the business side of his practice helps the doctor devote more time to the scientific and human side. To improve public relations, explain medical fees and costs in advance. Never overcharge, never undercharge, set fees fairly and give the best medical service possible. Reduce or cancel fees when circumstances warrant special consideration. Help the patient save money. Itemize statements and send bills regularly. Medicine has a business side but medicine can never become a business.—*J.Am.M.A., May 29, 1954.*

Notes from the Purdue Conference, Oct. 6-8, 1954

Virus diarrhea in cattle takes its name from the most constant symptom but many animals also develop laminitis, mouth lesions, and grossly enlarged lymph nodes. The morbidity is nearly 100 per cent and in Indiana the mortality has been from 4 to 16 per cent. Therapy should be directed at controlling secondary infection.—*W. R. Pritchard, D.V.M., Purdue University.*

• • •

Bovine rumenotomy is indicated not only in cases of "hardware disease" but also to relieve rumen impaction, green corn intoxication, frothy bloat, or for the removal of an ingested fetal membrane which apparently is more often the cause of indigestion than is realized.—*J. P. Arnold, D.V.M., University of Minnesota.*

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Leptospirosis has been called a "doctor's disease" as it can be found almost wherever it is looked for. It is usually a bacteremia with perhaps 60 per cent of bovine cases being asymptomatic. Abortions may occur in 20 to 30 per cent of pregnant cows usually in the last half of the gestation period and in sows usually in the last three weeks.—*H. S. Bryan, D.V.M., University of Illinois.*

• • •

The cortisone type of hormones mask the symptoms and have no curative effect on arthritis in man. The pathological changes increased in all of the patients studied after two and a half years of treatment. Since some patients do not tolerate these agents well, they should be kept at the lowest relief-giving level.—*R. E. Smith, M. D., West Point, Pa.*

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Cattle with acetonemia do not respond uniformly to treatment. Results with the cortisone type of therapy vary. The disease has been eliminated in some herds by feeding sodium proprionate. A 40 per cent dextrose solution, 500 cc. intravenously, is still indicated.—*F. H. Fox, D.V.M., Cornell University.*

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Hemorrhagic disease in chickens is characterized by an aplastic bone marrow probably caused by the constant feeding to young chickens of therapeutic agents which have a benzene ring, such as the sulfonamides. The condition somewhat resembles that produced in cattle by feeding trichloroethylene-extracted soybean oil meal but chickens proved very resistant to that poisoning; furthermore, that meal is no longer marketed.—*W. R. Pritchard, D.V.M., Purdue University.*

• • •

Much can be learned from a postmortem examination but a really good practitioner should have no losses to "post".—*F. W. Schofield, D.V.M., Ontario Veterinary College.*

• • •

The modern medicine man often seems to need but two types of pills — antibiotics if the patient has a fever; vitamins with mineral if not.—*F. W. Schofield, D.V.M., Ontario Veterinary College.*

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Calf Diseases.—Muscular dystrophy, or white muscle disease, affects beef calves almost exclusively, usually those 2 to 4 months of age. It apparently results from a phosphorus and vitamin E deficiency and often is precipitated by unaccustomed exercise, as when calves are first turned on pasture. On the other hand "sudden death disease" affects dairy calves almost exclusively, especially "pampered" calves 6 to 16 weeks of age. Calves which are apparently healthy may be dead in ten or fifteen minutes. It is probably an enterotoxemia due to *Clostridium welchii* inhabitants of the intestine.

Swine Diseases.—Atrophic rhinitis is infectious but only pigs less than a week old seem to be susceptible. The etiological factors are undetermined. Pasteurella have been a suspected factor but if so the agent must be a toxin since the organism has never been recovered from induced cases. Rickettsia have not been studied. Pen infection lasts less than a month. Cats may be unidentified carriers of the disease but the culprit usually is the nonsymptomatic hog. Pigs not stunted at 8 weeks of age may gain normally.

Edema disease, probably the same condition previously called "swine staggers," should be renamed since many cases develop no edema. It is an afebrile toxemia (as is enterotoxemia in lambs) characterized by its sudden onset, incoordination, paresis, loss of voice, dyspnea, cyanosis (not related to edema), and death. It often occurs following a change of feed or environment but can not be experimentally produced even by radical changes. One hundred lethal doses of botulinus toxin given to 1 pig failed to produce symptoms.

Salmonella septicemia in Canada, where there is no cholera, often produces typical hog cholera lesions. The pigs may have temperatures of 107 to 109 F., yet they continue to eat.—*F. W. Schofield, D.V.M., Ontario Veterinary College, Guelph, Ont.*

The Ten Top Meat-Eating Nations

In 1953 meat consumption per capita regained prewar levels. Uruguay led with 248 lb. per capita, followed by Australia, Argentina, New Zealand, Denmark, the United States (154 lb.), Canada, United Kingdom, Paraguay, and France (111 lb.). During the summer of 1954, 2.6 billion hot dogs (8 per cent more than last year) were consumed in the United States, an average of one and a half per person per week.—*The Cattleman, Oct., 1954.*

Vetafil – A Synthetic Suture Material New to North America

F. J. MILNE, M.R.C.V.S., D.V.M., and F. D. HORNEY, D.V.M.
Guelph, Ontario

THE ERA OF THE perfect suture material is not yet at hand so veterinary surgeons will no doubt continue to have differences of opinion as to the merits of the materials available.

Within comparatively recent years, stainless steel wire and synthetic materials, such as monofilament nylon, have enjoyed great popularity in veterinary surgery despite the criticism by some that they are hard to handle. In modern surgical technique, the advent of these agents should, in the writers' opinion, have relegated the formerly popular umbilical tape to a position of relative obscurity. There seems no logical reason for employing a bulky, capillary-attracting suture in the repair of laparotomy wounds and internal organs when other superior materials are available.

Of the buried sutures, catgut—an absorbable suture—has long held first place but many surgeons in both the human and veterinary fields have expressed disappointment with this agent and have turned to the use of nonabsorbable materials in order to overcome the disadvantages of catgut. To quote Partipilo[1]: "Whether one uses an absorbable or nonabsorbable suture is immaterial, *providing every known factor regarding the vagaries of the suture material is known by the surgeon*" (authors' emphasis).

One of us (F.J.M.) has used monofilament nylon as a buried suture in both canine and bovine abdominal surgery without adverse results, but some workers maintain that the tendency for knots to slip, when using this material, precludes its use as a buried suture, especially when used to ligate blood vessels. Where intermittent rather than sustained pressure is likely to be exerted on the suture, there is a great tendency for the knot in the suture to loosen. This phenomenon is best illustrated after a purse-string suture is applied following reduction of a bovine prolapsed rectum.

In bovine abdominal surgery, when using a lower flank or lower abdominal approach,[2] tension along the suture line in the muscular and aponeurotic layers is sometimes considerable and in these cases stainless steel wire tends to cut through the tissues involved. Catgut may break when such incisions are closed, but it is much more embarrassing when it breaks as the animal makes its first postoperative attempt to stand on its feet. It was following one such misfortune that vetafil* was first employed by the writers.

This material is a white, synthetically produced suture consisting of several strands coated with a special surface film. It is more flexible than monofilament nylon and thus more easily manipulated. Its tensile strength appears greater than that of catgut and in no case has a suture broken or a wound disrupted following its use. It may be sterilized by boiling but, since it is supplied in transparent containers holding disinfectant solution and guaranteed to be sterile, boiling should be unnecessary. This method of packing seems ideally suitable for surgery on the farm.

In the past nine months, vetafil (0.6 mm.) has been used in over 50 operations, including umbilical hernias in calves, heifers, foals, and yearling colts; and in bovine laparotomies, rumenotomies, and cesarean sections. In ovine laparotomies and cesarean sections, vetafil (0.4 mm.) was used. The material was used to close both the abdominal wall and the cutaneous incisions.

Dr. Milne is professor and Dr. Horney is assistant professor, Division of Surgery, Ontario Veterinary College, Guelph.

*Vetafil is manufactured by the Badische Anilin- and Soda Fabrik, Ludwigshafen, Germany.

In umbilical hernias, a double strand is not considered necessary, as is the case when catgut is employed.

In one advanced case of traumatic reticulitis, where death appeared likely, two rows of continuous Lembert sutures, using vetafil (0.4 mm.), were used to close the ruminal incision. Four days later, the cow died and autopsy revealed that the rumen incision had healed with no macroscopic evidence of tissue reaction. The same size of suture was used to close the uterine incision in one case of bovine cesarean section but to date it has not been possible to learn if the cow has become pregnant.

One umbilical hernia in a heifer had been operated upon twice before presentation at the clinic for surgery. Considerable fibrosis was evident on incising the skin. The hernia was repaired with overlapping mattress sutures of vetafil, and a guarded prognosis was given to the owner. Six months later, the hernia recurred. Following slaughter, the surgical area was subjected to close examination. Each suture was still intact and embedded in a covering of fibrous tissue. Around one of the knots was found a small quantity of encapsulated pus which on culture revealed *Corynebacterium pyogenes*. The "new" rupture had occurred to one side of the old hernia —a not uncommon finding in such "breakdowns."

As with all other nonabsorbable suture materials, aseptic surgery is necessary; otherwise abscessation and sinus formation may result. To date the only drawback, and one which can not at this stage be attributed to the vetafil, was the production of a small amount of serous fluid at the site of operation following repair of umbilical hernias in 3 calves. Tapping of the small swelling was all that was necessary to effect complete recovery.

Correspondence with the Hannover Veterinary College, Hannover, Germany, reveals that vetafil and other such synthetic materials have been used there for some time with satisfactory results. Merkt[3] did state, however, that they found a tendency for the material to cut through the tissues when employed as a uterine closure in cesarean sections in cattle, sows, and goats.

References

[1]Partipilo, A. V.: Surgical Techniques and Principles of Operative Surgery. 5th ed. Lea & Febiger, Philadelphia (1953): 28.

[2]Milne, F. J.: Bovine Caesarean Section. Observations on the Different Approaches. Vet. Rec., *64*, (April 19, 1952): 229.

[3]Merkt, H.: Personal communication, 1954.

Myxofibroma in a Cow

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Because few records of myxofibromata in cattle appear in the literature, we are reporting an occurrence of this rare neoplasm in this species. These tumors are composed of fibroblastic cells which produce fibroglia, collagen, elastic fibrils, and mucin.

Fig. 1—Microphotograph of myxofibroma of a cow, consisting of spindle-shaped cells resting in pale basophilic mucin. x 110.

Feldman[1] reported a myxofibroma weighing 960 Gm., attached to the lining of the rectum near the anus in a cow.

In this case, the growth was removed

Dr. Marshak is a practitioner in Springfield, Vt.

The author thanks Dr. James Wadsworth, of the Department of Animal Pathology, University of Vermont, for the final identification of the tumor and for preparing the microslides.

[1]Feldman, W. H.: Neoplasms of Domesticated Animals. W. B. Saunders Co., Philadelphia (1932):98.

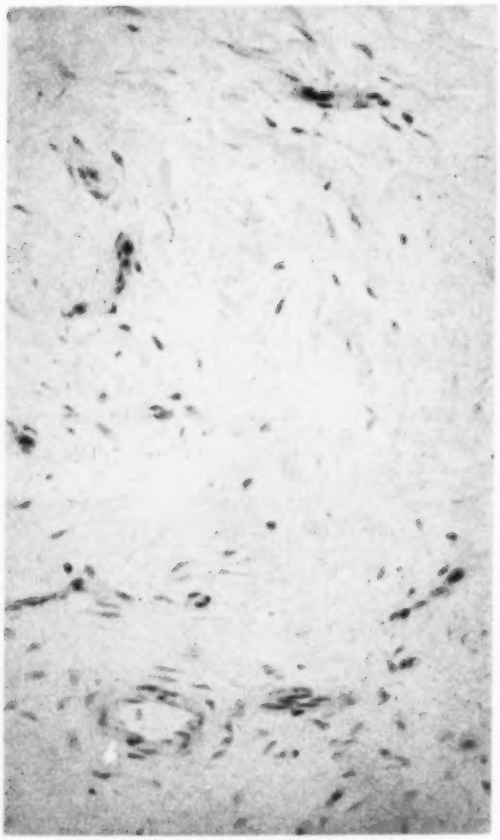

Fig. 2—Microphotograph of myxofibroma of a cow, showing stellate cells, collagen, and mucinous matrix. x 180.

from the dorsal aspect of the tail of a 9-year-old grade Guernsey cow just proximal to the switch. It's gross appearance was that of an egg-shaped, whitish, mottled mass with hairs on its surface, and about one half the size of a tennis ball. On cross-section the interior of the tumor seemed to have cortical and medullary areas with cystic portions resembling the inside of an orange. Histopathologically it proved to be a myxofibroma consisting of spindle-shaped cells set in a pale basophilic mucin (fig. 1 and 2).

A Cow with Leptospirosis Aborts.—A cow showing weakness of the hind limbs, anorexia, and fever (103.4 F.) was treated for leptospirosis. She recovered but aborted two weeks later. When she reacted twice two weeks apart with a titer of 1:2,000 for *Leptospira canicola*, she was slaughtered.—*D. D. Bleicher, V.M.D., Fredericksburg, W. Va.*

Tetanus in a Dog

JOSE B. ARAÑEZ, D.V.M.

Quezon City, Philippines

Tetanus in dogs is relatively uncommon. In eight years since graduation, the last six with the veterinary clinical staff in the College of Veterinary Medicine, University of the Philippines, I have seen and treated just 1 dog with tetanus.

On June 19, 1954, a 3-month-old rachitic female Doberman Pinscher, weighing 14 lb., was docked, and the ears were trimmed on June 24. On June 25, a small hemorrhagic wound was observed on the mucous membrane of the anus, due to constipation. The dog was immediately given milk of magnesia to relieve the straining. The wounds of the anus, ears, and tail were treated daily. On June 26, partial anorexia and a slight stiffness of the body and legs were noticed.

The pulse, respiration, and temperature were normal. At this time, 20 cc. of calcium gluconate solution and 4,500 units of tetanus antitoxin were injected intraperitoneally and 400,000 units of penicillin was administered intramuscularly. More tetanus antitoxin and penicillin were recommended but were not made available. The dog was then given calcium gluconate daily.

The next day, there was marked stiffness of the head and neck, the gait was slow and stiff, and the dog could hardly take food. It occasionally vomited and the urine was scanty. On the third day, there was complete anorexia, dysphagia, the reflex excitability was increased, the legs were spread apart, and the dog could hardly stand without help. It preferred to lie down and occasionally groaned. The general body stiffness, the characteristic facial expression, and the sawhorse attitude were typical of tetanus. The respiration was rapid, the nostrils were dilated, the commissures of the lips were drawn back, and the mouth could hardly be opened. The trimmed ears stood rigidly close to each other as if pasted together and the docked tail stood straight upward from the back. There was trismus, orthotonus, and protrusion of the membrane nictitans.

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On the fourth day, the dog could not stand, the muscles of the back and posterior limbs were hard on palpation, and the extremities were all stiff and straight. The tonic spasms were aggravated on slight palpation and excitement. The eyes appeared dull, due to the contracted pupils and eyelids, and the skin of the head between the trimmed ears was deeply wrinkled. On the fifth day, the symptoms were even more prominent, the teeth being exposed due to the prominent retraction of the commissures of the lips. The dog was weak and thin. It died during the night of July 1.

From this unfortunate incident, it seems worthwhile to give a dog a prophylactic injection of tetanus antitoxin after surgical operations or when there are wounds especially on, or close to, the alimentary tract. Complete debridement and cleaning of the wounds on the ears, tail, and mucous membrane of the anus were performed on this dog. The focus of infection is believed to have entered through the wound in the anus.

Tetanus in Calves from Elastration

L. A. MAGRATH, D.V.M., and
J. M. MAGRATH, D.V.M.

McCook, Nebraska

On June 22, 1954, a client reported that he had some "stiff calves." Two were showing typical clinical signs of tetanus—rigidity, elevated tail head, and undulating nictitans. On June 15, the owner had "castrated" his 10 male calves by applying rubber bands to the base of the scrotum of each. One of the calves was so severely affected that euthanasia was advised and carried out. The other was given 3,000 units of tetanus antitoxin to no avail—it was found dead two days later. Each of the other 8 was given 1,500 units of antitoxin and one month later none had shown signs of tetanus.

The scrotums of all calves sloughed smoothly but some required four weeks to do so. This method of castration should be discouraged since the local necrosis and lack of oxygen create an ideal condition for the development of *Clostridium tetani*.

The Drs. Magrath are practitioners in McCook, Neb.

A Steer with a Twelve-Year-Old Rumen Fistula

L. L. NANGERONI, D.V.M., M.S.

Ithaca, New York

A ruminant with a rumen fistula is not the rarity that it was some years ago. Many of the agricultural colleges and some commercial research laboratories, in addition to the veterinary colleges, maintain a fistulated animal for studies in rumen physiology.

Fig. 1—"Bill," a Jersey steer with a large rumen fistula.

For workers interested in the health and longevity of an animal with a rumen fistula, as well as for general interest, it may be worthwhile to record the history of a Jersey steer, known as "Bill," with a large rumen fistula, 11 inches vertically and 8½ inches horizontally at its maximum dimensions.

Bill, now in his thirteenth year with the

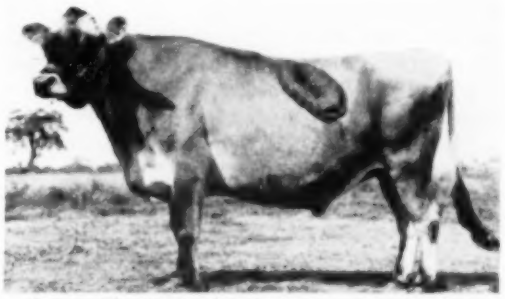

Fig. 2—The fistula closed with a pneumatic plug.

From the Department of Physiology, New York State Veterinary College, Cornell University, Ithaca, N. Y.

Department of Veterinary Physiology at Cornell University, was born in the spring of 1942 in the herd of the College of Agriculture. The fistula was made in March, 1943, when he was 10 months old. He has served in several research studies including some color filming of the activities of the interior of the rumen and a photokymographic study of regurgitation.[1]

Each year Bill is available to the veterinary and graduate students, during their physiology courses, for observation, study, and palpation of the interior of his rumen. About 500 veterinary students have used Bill to become familiar with the action of the rumen. In addition, about 200 graduate students have used him in their physiology courses. He has also been a part of the yearly demonstrations for Farm and Home Week at Cornell where at least 50,000 people have looked inside his rumen.

The photographs (fig. 1 and 2) were taken in the summer of 1954 while he was out to pasture. For years the fistula was closed with a compression plug but it is now closed with an inflatable plug designed by Dr. R. W. Dougherty. It is easily removed after deflation.

During the school year, Bill is kept in a box stall and is cared for by a veterinary student who looks after his every need. Along with his scientific uses, this gentle, patient animal has become a pet of the staff and students.

[1]Downie, H. G.: Photokymographic Studies of Regurgitation and Related Phenomena in the Ruminant. Am. J. Vet. Res., 15, (April, 1954): 217-223.

Conception Intervals in Cows

In a controlled experiment, using only cows which had calved normally, of the 26 bred for the first time less than fifty days after parturition (ave. 40 days), only 30.8 per cent conceived at the first service, an average of 2.52 services being required; the interval from parturition to conception averaged 100.5 days. Similar data for the 24 cows bred at fifty-one to sixty days were —66.7 per cent, 1.65 services, and 74.5 days; for the 50 bred at sixty-one to ninety days—70 per cent, 1.55 services, and 93.8 days; and for the 50 bred later than ninety days—76 per cent, and 1.54 services per cow.

These groups of cows showed no differences in rate of abortion, retained placenta, and metritis at the following parturition. This agrees with previous observations that breeding efficiency increases after sixty days from parturition.—*J. Dai. Sci., Sept., 1954.*

Leptospirosis in Brood Sows

In Australia, when the sows in two herds, which had farrowed premature, dead, or weak pigs, were tested, all were negative for brucellosis but many were positive for either *Leptospira pomona* or *Leptospira mitis*. Leptospira were also demonstrated in the urine of several sows in each herd.

Later, 2 healthy pregnant gilts were inoculated, 1 with *L. pomona*, the other with *L. mitis*. Neither showed clinical symptoms and both continued to gain more than 2 lb. per day. The gilt inoculated with *L. mitis* discharged organisms in her urine from the sixteenth postinoculation day until three days before farrowing 9 healthy pigs. The gilt inoculated with *L. pomona* had a mild rise in temperature the seventh day and excreted Leptospira from the thirteenth day until fifty-eight days after farrowing. Of her 8 pigs, 4 were born dead, 3 were weak and died, 1 being healthy. Leptospira were demonstrated in 3 of the 7 dead pigs, in the fetal membranes and in the urine of the surviving pig after 23 days of age. This pig weighed 46.5 lb. at 8 weeks of age.—*Austral. Vet. J., July, 1954.*

Inseminating Virgin Heifers

First-service heifers are usually harder to "settle" than cows for the following reasons: (1) They are seldom confined where they can be observed twice daily; (2) their estrous cycle is less rhythmic; (3) as their cervix is smaller and less relaxed, in 25 to 40 per cent of them the semen must be deposited at the external os rather than in the uterus; and (4) about 6 per cent are sterile because of abnormalities.

Nevertheless, when experienced technicians inseminated 6,000 cows and 1,340 first-service heifers, the nonreturn rate for the heifers was 69.8 per cent, for the cows 70.1 per cent. The condition of the heifers was a factor, the nonreturn rate in extremely thin heifers being 61.9 per cent, on average thrifty heifers, 69.9 per cent, and in well-conditioned heifers, 81.2 per

cent. Extra feed a few months before breeding age is helpful but being overfat is a handicap.—*Hoard's Dairyman, Oct. 10, 1954.*

A New Snare-Type Caponizing Instrument

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Among poultrymen, caponizing is a popular operation. Its significance in hastening growth, increasing size, improving the quality of flesh, and feminizing behavior in chickens, ducks, turkeys, and guinea fowl is well recognized. However, hemorrhages and the incomplete removal of the testes, resulting in "slips," are sometimes encountered. The author, therefore, devised a new snare-type caponizing instrument (fig. 1) a year ago. It was first used in the caponization of native drakes by Aranez and Jacalne.[1] Since then, it has been successfully used in cockerels from 2 months to 1 year old.

The parts of this instrument (fig. 1) are easily dismantled and assembled. They are the thumb handle, plunger, barrel, small rod, and a fine copper wire. The thumb handle is provided with a ring for the thumb, for pushing and pulling the plunger. The base of the plunger is provided with two rings, for the middle and fore fingers, and the tip has two small holes for anchoring the ends of the copper wire. The barrel, which diminishes in diameter, has a hole through the base which will fit with the corresponding hole in the thumb handle so they can be fastened by a small rod. The upper third of the barrel is provided with two opposing longitudinal fissures for the downward and upward sliding of the plunger. The distal end of this barrel is small, just large enough for the wire loop to pass through, and is slightly curved to facilitate looping the testis. The small rod serves to fasten the thumb handle to the base of the barrel. The fine copper wire is attached to the end of the plunger.

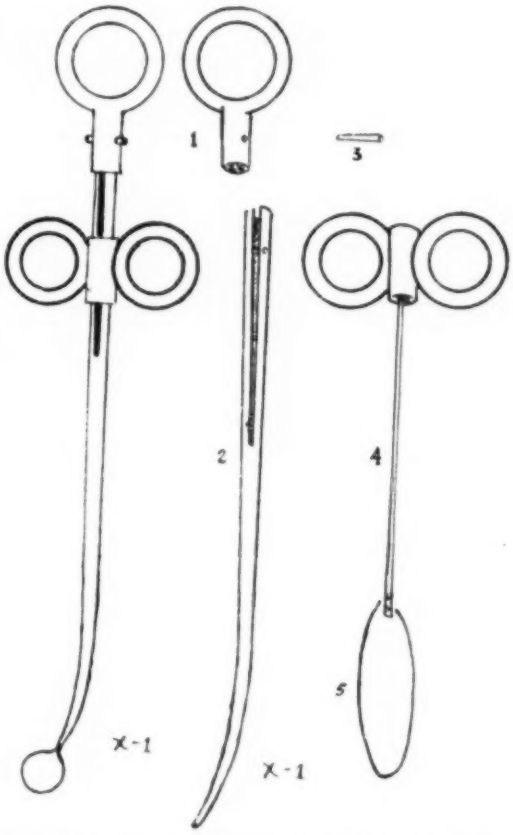

Fig. 1—A new snare-type caponizing instrument (left) threaded with a fine copper wire which forms a loop at the tip. The parts (right) of the dismantled snare-type caponizing instrument: (1) thumb handle; (2) barrel; (3) small rod; (4) plunger; and (5) fine copper wire.

The manipulation of this instrument is simple. The plunger is threaded with a fine copper wire, thus forming a loop with the ends of the wire locked in the two holes at the end of the plunger. The loop is compressed to facilitate its introduction inside the barrel, then the threaded plunger is pushed down through the barrel. The thumb handle is then fastened to the base of the barrel by the small rod. The wire loop will protrude from the barrel when the plunger is pushed and will recede inside the barrel when the plunger is pulled. The compressed loop must be opened to form a ring of the proper size for the removal of the testis. It is carefully slipped under the testis until the whole gonad is enclosed,

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The author gratefully acknowledges the help of Mr. Alfredo Bermudez, a junior student in the college, for the illustration in this article.

[1]Arañez, J. B., and Jacalne, A. V.: Caponization of Native Drakes. J.A.V.M.A., 123, (Oct. 1953):315-320.

then the loop is gently closed, by pulling the plunger, which will sever the gonad completely from its attachment. The gonad is then lifted from the body cavity with a spoon.

The advantages of this new snare-type instrument in caponization, rather than the spoon or the scoop, are: (1) easy looping and removal of the testis; (2) hemorrhage from removal of the testis is prevented; (3)trauma on the surrounding structures is lessened; (4) "slip" formation is minimized; (5) caponization is faster; (6) birds of varying sizes can be caponized with this instrument successfully.

Surgical Correction of an Umbilical Cecostomy in the Horse

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A Thoroughbred yearling filly had been affected since birth with a hernia about two fingers wide at the umbilicus. In January, 1954, a sudden flare-up occurred in which the umbilical region became tense, warm, edematous, and the temperature rose to 102 F. Treatment consisted of antibiotics parenterally and local massage with icthammol ointment (10%). Four days later, the fundus of the hernial mass appeared to be abscessed and in two more days it ruptured, allowing the discharge of feces.

Permission to perform surgery was immediately requested from the insurance company (Lloyds of London). The next day it was granted and the surgery undertaken.

Surgery was performed in the hallway of a large barn. After placing a rope harness on the filly, anesthesia was begun by intravenous injection of equithesin, a combination of chloral hydrate, magnesium sulfate, and pentobarbital sodium. When incoordination was produced, the ropes were tightened and she was eased into lateral recumbency. Surgical anesthesia was then completed, the rope harness was removed, and the patient was placed on a tarpaulin padded underneath with straw. The filly was then secured in dorsal recumbency in the following manner: both hind feet were drawn backward and upward and secured to a post, the forefeet were then cramped against the ventral thorax, a rope tied to one pastern was passed under the withers and tied to the other pastern. To block the patient in dorsal recumbency, bales of hay were slipped under the tarpaulin and pressed against the thorax on each side in such a manner that respiration would not be hampered. In this position, the operative site was readily accessible, although the surgeons had to work in a knee position.

Aminosol was then administered intravenously at approximately 40 drops per minute for the duration of the surgery. As more anesthetic was required, it was injected by discontinuing the aminosol temporarily while using the same needle for giving the anesthetic. A tank of oxygen was available in case of respiratory embarrassment.

The entire ventral abdominal wall was clipped closely, less irritation being caused by clipping than by shaving. After scrubbing the area with a soap solution, tincture of phemerol was applied as an antiseptic. Double draping was accomplished by using two especially made drapes, 6 by 7 feet, with a rectangular window 4 by 7 inches in the center to expose the surgical field. These were secured in place by towel clamps. All surgical instruments, gowns, gloves, and drapes had been sterilized by autoclaving.

An elliptical piece of the skin covering the fundus and incorporating the fistulous opening was completely isolated by making two curved incisions which met anteriorly and posteriorly. By sharp dissection, this isolated skin was dissected and discarded. Then the edges of the surrounding skin were dissected from the underlying tissues so that the peritoneal ring was exposed. This dissection was tedious because the edema made it difficult to differentiate tissues. At this point, the hernial sac was completely removed, the peritoneal ring being left intact. Enclosed in the removed hernial pouch was the remains of what appeared to be an abscess.

In order to free the adhered blind end of the cecum from the peritoneal ring, so that the bowel could be sutured, it was necessary to make an incision through the linea alba anterior to the adhesion. This incision was approximately 2 inches long and revealed that the area of adhesion encircling the

Drs. Proctor and Sutton are practitioners and Dr. Coleman is a physician in Lexington, Ky.; Dr. Gibbens is now practicing in North Hollywood, Calif.

peritoneal ring was narrow, not more than ½ inch in width. The adhesion was broken down by a combination of blunt and sharp dissection, being careful to prevent contamination of the peritoneal cavity by bowel contents. The bowel was then partially exteriorized and sutured transversely, using a Connell suture over-sewed with a Cushing stitch. Size No. 0 medium chromic intestinal catgut was used for the Connell suture, with size No. 0 silk used for the Cushing stitch.

Because of the edema and contamination by the open bowel, the abdominal wall was closed with both tension and interrupted sutures. Stainless steel No. 26 tension sutures were placed in position first, but left untied until the interrupted sutures could be placed. They were inserted approximately 1 inch from the free edge of the skin, going through the skin, external sheath of the rectus, rectus muscle, internal sheath of the rectus, and peritoneum, then across to the opposite side and out in the reverse order. Five of these tension sutures were thus placed in position. Surgaley,* size 0, was then used for the interrupted sutures to approximate the hernal ring, the ring having first been abraded. The skin was also sutured with surgaley, size 0, by using interrupted vertical mattress sutures. The tension sutures were then tied over a piece of rubber tubing to minimize pressure on the skin. After the filly got up, in order to minimize tension on the sutures, 2-inch adhesive tape was used to make an abdominal band. First an abdominal pad, 6 by 8 inches, was placed over the surgical site, then the tape was wound around the abdomen, keeping the area of tape and skin contact narrow over the back by overlapping the tape and allowing it to spread out ventrally to cover the entire operational area. The abdominal pad was applied following the animal's recovery from anesthesia.

Postoperative care consisted of giving, on the following day, both 1,000 cc. of aminosol by slow intravenous injection and 3 qt. of mineral oil by stomach tube, and giving antibiotic therapy daily for nine days. The filly was then fed bran mash fortified with amino acids and organic minerals daily for ten days. A moderate amount of alfalfa and timothy hay was fed daily.

The abdominal pad over the incision was changed every third day by cutting the tape along the edge of the pad, applying a clean pad and then retaping over the surgical area. The abdominal band was completely removed on the tenth day following surgery, the tension and skin sutures being removed on the eighteenth day. Because of devitalization of the skin at the time of surgery, some sloughing of cutaneous tissue occurred along the incision border, but this healed readily by granulation. One month after surgery the patient was sent home, apparently completely recovered, and at six months she had shown no evidence of complications.

*Surgaley is a braided steel suture.

Discussion and Conclusions

Considerable preparation, equipment, and professional help are needed to perform abdominal surgery of any magnitude on the horse. The actual surgery in this case consumed almost three hours, with the patient not arising until four hours after its completion. This indicates the need for more efficient surgical teams to eliminate waste motion, to shorten the period of anesthesia, and thus reduce the mortality percentages in veterinary surgery. Furthermore, the development of an anesthetic which would shorten the recovery period to half an hour or less and enable the patient to regain its feet with a minimum of struggling is desirable.

This case again illustrates the fact that invasion of the abdomen in the horse incurs no undue risk toward development of peritonitis if aseptic precautions are observed. Also, cases such as this constitute an emergency, and unavoidable delay in obtaining permission to operate can jeopardize the animal's life. Fortunately, in this case permission was promptly granted.

Increasing Sow Fecundity

Pointers for increasing the size of swine litters include: (1) flushing for about three weeks before breeding with an ample, nutritious ration, to increase ova production; (2) reducing the ration after breeding to about two-thirds of the full feed or self-feeding a bulky ration; (3) not breeding until the third or fourth heat period when more ova mature, which usually increases the litter by 1 to 3 pigs.—*Hoard's Dairyman, Oct. 10, 1954.*

Urethrotomy in a Dog

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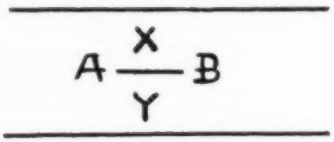
GEORGE WALMSLEY, D.V.M.
Fairhaven, Massachusetts

A 7-year-old male Dachshund was presented with a history of anorexia, dullness, and tenesmus which produced only a few intermittent drops of urine. Clinical examination revealed an enlarged, turgid bladder and the presence of a calculus in the urethra approximately 1½ inches posterior to the os penis and somewhat covered by the pendulous scrotum. Attempts to repel the calculus into the bladder with a No. 8 woven catheter were unsuccessful.

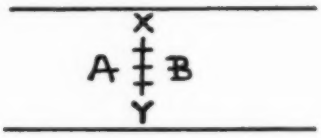
Following a twelve-hour fast, the dog was anesthetized with nembutal,® placed in dorsal recumbency, and the operative site was clipped and scrubbed with surgical soap followed by an application of alcohol. A catheter was then passed into the urethra to the obstruction, the pendulous scrotum was retracted, a median incision was made through the skin and fascia, and a minimal longitudinal incision made into the urethra (fig. 1) slightly anterior to the calculus. When the calculus was removed, a slight amount of urine escaped through the urethral incision.



STEP 1
SCHEMATIC DIAGRAM SHOWING THE LONGITUDINAL-MEDIAN URETHROTOMY

Fig. 1—Ventrodorsad sketch of the urethra. Step 1, A-B represents the longitudinal, median urethrotomy incision.

The catheter, which fit the urethra snugly, was then passed into the bladder and most of the urine was aspirated with a syringe. The urethral incision, which was approximately ⅛ inch long, was then cleansed and sutured "perpendicularly," *i.e.*, at a right angle to the direction in which it was made (fig. 2), so as to leave a larger rather than a smaller lumen diameter at the site. The first suture was placed at points "A" and "B" (fig. 1) and when drawn tight it converted the longitudinal incision into a tranverse one. The number of sutures required will vary.



STEP 2
THE URETHRAL INCISION IS PERPENDICULARLY CLOSED RESULTING IN A GREATER LUMEN DIAMETER AT THE SITE.

Fig. 2—Ventrodorsad sketch of the urethra. Step 2, X-Y represents the closed incision with sutures placed transversely to the long axis of the tube.

This principle of closing an incision in a direction opposite to which it is made is described in early surgical texts on man and has been used at some veterinary clinics for the removal of foreign objects from the small intestines, thereby avoiding postoperative strictures. In applying it to this urethra, three interrupted sutures of No. 00 medium chromic catgut and an atraumatic needle were used. The overlying tissues were then drawn over the urethral incision in various directions, in an attempt to obliterate as much dead space as possible, and all sutures were tied so that the knots were not directly over the urethral incision. The skin incision was closed routinely with interrupted sutures and was dusted with a sulfonamide powder.

The catheter was left in the urethra and bladder and was taped to the abdomen. A stockinette bandage with a slit, through which the end of the catheter emerged, was then applied around the body. The catheter was directed downward by being threaded through a punctured bottle cap, which was also taped to the abdomen. This avoided having the urine soak the body and the bandage and facilitated the frequent checking to be sure the urine dripped constantly.

Two cubic centimeters of an aqueous solution containing 200,000 units of penicillin

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and 0.25 Gm. of dihydrostreptomycin per cubic centimeter was administered intramuscularly in two daily doses.

The slight swelling which developed at the incision site diminished in forty-eight hours. The temperature having remained normal and the skin incision having healed by primary intention, the catheter was removed on the sixth postoperative day. Its removal occasioned some hemorrhage but this soon disappeared. One year after the operation, the dog had experienced no further trouble.

By eliminating the postoperative constriction, this type of closure could be useful in the removal of urethral calculi in large animals, particularly in valuable bulls used for artificial insemination.

Rams Stimulate Estrus in Ewes

Australian observers believe that introducing rams to the ewe flock early in the breeding season acts as an exteroceptive factor which markedly synchronizes the breeding activity of the ewes. Apparently the ewes, being on the threshold of estrous activity, are stimulated to ovulate within a few days without manifesting estrus. They then exhibited synchronized estrous periods seventeen to twenty-three days after the rams were introduced. Allowing rams to associate continuously with ewes, or introducing them after the breeding season has started, has no such stimulating effect.—*Austral. Vet. J., July, 1954.*

Fetal Mortality in Cows.—Five years of observations on 690 cows by rectal palpation indicated that fetal deaths are highest (1.3%) during the third month (61 to 90 days). Mortality then receded to 0.29 per cent during the sixth month before rising to 1.16 per cent during the eighth month, making a total mortality of 6.38 per cent.—*J. Dai. Sci., Sept., 1954.*

Pathology of the Pullet Reproductive Tract in Newcastle Disease

In a study of 73 laying pullets at the University of Illinois, infection with the Newcastle disease virus resulted in a cessation of egg production for seven to twenty-two days, an oophoritis with marked degeneration or atresia of Graafian follicles, and an inflammation of various sections of the oviduct. However, the only organ to suffer functionally during return to production is the uterus or shell-secreting portion, resulting in a decrease of shell weight and thickness which may last for fifty-six days.—*Poult. Sci., Sept., 1954.*

Aminoacridine for Infected Wounds

Acridine compounds, when first used in World War I, were irritating and toxic. In 1937, two new, less-toxic compounds were synthesized, 5—aminoacridine being the more potent. It is used locally in dilute solution, 1 Gm. in 5 liters of half strength physiological saline solution, applied 20 to 30 cc. every four hours to the gauze packing or covering of the infected wounds. Dressings are changed every day or two. Infected surgical wounds need not be opened widely to apply it. Deep red, healthy granulations appear in four or five days. Three of four patients with infected third degree burns responded satisfactorily.—*Am. J. Surg., Oct., 1954.*

Twin Chicks.—Twin chickens from a double-yolked egg, presumably the first ever to survive hatching, was recently reported. They were not from a single yolk, being of different sex and color. The male was normal except for crooked outer toes, while the female was small and crippled. Double-yolked eggs may be 40 per cent as fertile as single-yolked eggs but the embryos usually die during the first week, although some develop fully. Double-yolked eggs are most common during early production, sometimes reaching 2.8 per cent during the first seven weeks.—*Res. in Rev., June, 1954.*

Open Treatment of Surgical Wounds

Among the recent changes in attitudes toward surgical techniques is that toward wound dressings. The development of antibiotics, improved nutrition, liberal use of blood transfusions, and a better appreciation of the pathophysiology of the postoperative patient has reduced the emphasis on dressings in spite of traditions. Dressings on facial wounds and burns have been abandoned and those on other surgical wounds limited to twenty-four and, occasionally, forty-eight hours except when drains or a need for pressure exists.—*Am. J. Surg., Oct., 1954.*

CLINICAL DATA

A Capillary Tube Test for the Detection of Bacteria Associated with Bovine Mastitis

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MASTITIS HAS been recognized as an important disease problem confronting the dairy industry for many years. Past experience has demonstrated that the application of the information and facilities which are available and the exercise of sound control measures can accomplish a great deal in alleviating this burden.

The veterinary profession, through the general practitioner, plays an important role in such a control program since the latter is in an advantageous position to detect disease conditions in the dairy herd. He is also able to render advice as to the best course of prevention or treatment. Central laboratory facilities are an invaluable asset, but the practitioner also needs more diagnostic aids readily available for disease detection on the farm and in his office.

The term, "mastitis," is a descriptive one, indicating an inflammatory disease in the mammary gland, characterized by tissue changes that alter the secretory product. Depending on its severity, the disease may be classified clinically as acute, subclinical, or chronic. The nature of the etiological agent, whether it be infectious, chemical, thermal, or mechanical, determines to a great extent the course of the disease.

Cases of acute mastitis may be readily recognized by a physical examination of the animal and her udder. Subclinical mastitis, however, is often overlooked because the changes in the udder tissue and secretion are not as marked or as easily detected. Chronic mastitis may be either the termination of an acute case or it may have developed slowly as the result of repeated subclinical manifestations of the disease.

The etiological agent incriminated in the subclinical and chronic types of mastitis is nearly always of an infectious nature. Chronic and subclinical cases are important because they are more difficult to detect and, as a result, serve as a source of infection for the entire herd. This form of the disease may develop to the untreatable state before it is noticed. It may also be the cause of lowered production and lost profits for the dairyman.

TABLE I—Summary of Results, Comparing the Hotis and Capillary Tests

Test	Reaction	No. of tests	Percentage of tests	
Hotis	+			
Capillary	+	185	15.06	97.72
Hotis	−			
Capillary	−	1,015	82.66	
Hotis	+			
Capillary	−	12	0.98	2.28
Hotis	−			
Capillary	+	16	1.30	
Total		1,228		

The infectious cause of subclinical and chronic mastitis is usually specific for each case, one bacterial agent often being primarily responsible. Quite often there are contaminating forms and occasionally the causative agents may be multiple and operate in a synergistic relationship.

A number of procedures and tests are available for the detection of bovine mastitis. Most of them have merit and some are accurate in the detection of infectious conditions or abnormal changes in milk secretion. However, the most reliable and accurate methods of detecting infection are too complex, cumbersome, and time-consuming for the veterinarian to employ in conjunction with his general practice.

TESTS FOR MASTITIS

The various tests for the detection of mastitis may be grouped into two general categories, the nonspecific and the specific. The nonspecific type of test usually indicates only the fact that the milk secretion is not physiologically normal. There may be either an abnormality in some of the chemical constituents or in the presence of body tissue or bacterial cells. The specific type

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The authors acknowledge with gratitude the help and cooperation of Dr. George Mechling of the Ohio Department of Public Welfare, and of Dr. John McClain of Frankfort, Ind.

of test demonstrates the fact that there is present in the secretion a specific infectious agent possessing pathogenic properties. The clinician responsible for the case should know the specific infectious agent so that he may accurately determine his course of treatment and preventive measures.

Some of the nonspecific tests, such as a physical examination of the udder, the bromthymol blue test, and the microscopic examination of a milk smear are valuable aids, but the Hotis test is the only one of the specific type which is simple enough to be of much practical value. The remainder of the specific tests, which demand culturing of the organism or the use of differential mediums, are restricted to laboratories. The Hotis test has not been generally used by the practitioner because of the difficulties in preparing the reagent and tubes, reading the results, and the trouble or cost involved in washing or replacing the tubes. Therefore, the possibilities of utilizing a capillary tube containing an indicator was investigated.

THE CAPILLARY TEST

After several trials, a capillary tube 92 mm. long with a 0.8-mm. inside diameter was selected as being the most practical. This particular size was preferred because it was easier to handle and fill, stronger, and the bore allowed good diffusion of the reagent through the milk.

The tubes are prepared for use by instilling a 0.045 per cent bromcresol purple solution into the tube and then sterilizing it. The tubes are filled to about 1/20 to 1/18 of their length with the reagent and then laid horizontally on racks in a drying oven at 90 C. for six hours until the reagent is dried in the tube. The tubes are then placed in glass vials and returned to the drying oven for a few hours at 105 C. for sterilization. The same type of tubes, already containing the reagent and sterilized, are available commercially. However, they could be prepared by the practitioner (fig. 1).

In evaluating this test, when capillary tubes and Hotis test tubes were filled from a common sample of milk, there was good agreement between the two tests (table 1). In the cases of disagreement, complicating factors, such as the presence of staphylococci, rods, and leukocytes, were observed in the correlating microscopic milk smears that were made from each sample.

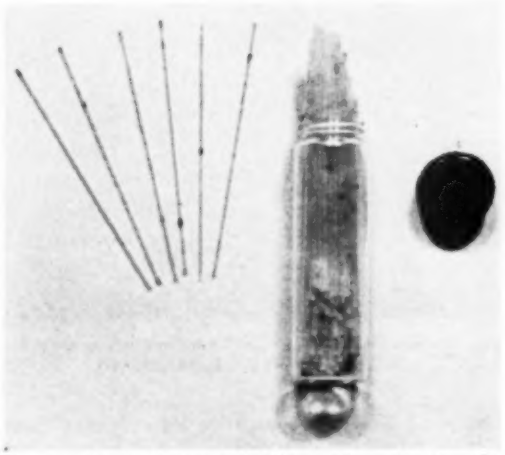

Fig. 1—Home-prepared capillary tubes showing the dried bromcresol purple.

Under field conditions, after cleaning the teat carefully the sample of milk can be collected by touching one end of the capillary tube to a gentle stream of milk from the teat orifice (fig. 2). The distal end of the tube should be slightly depressed to facilitate filling. After filling, the end of each tube is plugged as it is inserted into modeling clay in a suitable holder (fig. 3 and 4) and left while the set is placed in an incu-

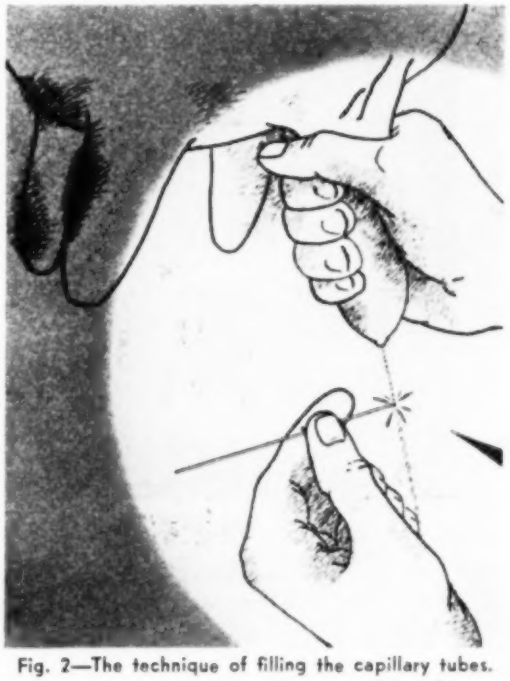

Fig. 2—The technique of filling the capillary tubes.

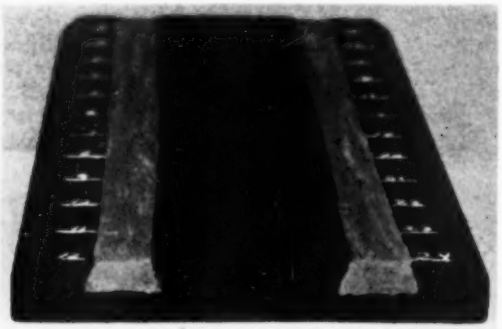

Fig. 3—Grooved board containing modeling clay for insertion of filled capillary tubes.

bator at 37 C. for eighteen to twenty-four hours before interpreting.

After incubation, a yellow coloring in the tube is an indication of the presence of *Streptococcus agalactiae*. Negative reactions are indicated by a bluish purple color, as in the Hotis test. Some investigators have demonstrated the possibility of using the Hotis test to detect the presence of bacteria other than *Str. agalactiae*. Similar possibilities have been observed with the capillary test, but as yet no attempt has been made to correlate these findings microscopically or culturally.

Following incubation, if it is desired to make microscopic examinations, the clay-plugged end of the tube is broken off and a drop of milk is placed on a glass slide and examined as with any other milk smear.

The most troublesome part of the test usually is in filling the tube. However, with a little practice, this can be done as easily as filling an ordinary test tube. The tube should be touched to the stream of milk and no attempt made to milk into the tube. It is important that no bubbles be allowed to remain in the tube since they interfere with the proper diffusion of the reagent throughout the milk. If bubbles do occur, a little more milk should be run through the tube to push them out.

The advantages of this test are: (1) It is less expensive than other similar testing procedures; (2) it requires less space for storage and incubation; (3) it can be more easily carried into the field; and (4) borderline reactions that are difficult to interpret are not as common as with the regular Hotis test.

CONCLUSION

Of 1,228 quarter samples tested, 28 showed a disagreement in results. A positive Hotis result is assumed to indicate the presence of *Streptococcus agalactiae*. Both tests sometimes failed to detect streptococci which appeared on microscopic examination of the smear, but many of these were streptococci other than *agalactiae*. Borderline Hotis reactions, which sometimes are hard to classify, are less common in the capillary test. Several thousand comparative Hotis and capillary tube tests have also been run by veterinary students in the past two years. The agreement has remained substantially better than 90 per cent.

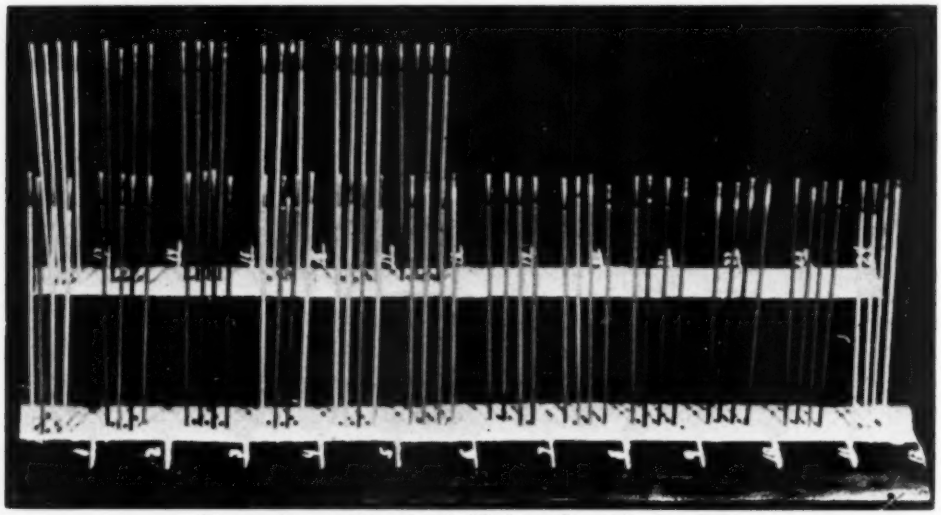

Fig. 4—Grooved board with filled capillary tubes in place.

Treatment of Canine Tapeworms with Atabrine

R. P. LINK, D.V.M., Ph.D., and JEAN C. SMITH, D.V.M.

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IN 1950, CULBERTSON[1] reported the action of quinacrine hydrochloride (atabrine ®)** in the elimination of the tapeworm *Hymenolepis fraterna* from mice. He found that atabrine readily penetrated the wall of the small intestine in the areas where the larvae and adult females of the parasite were located, and caused expulsion of live tapeworms forty-eight to seventy-two hours after onset of treatment. Neghme,[3] in 1945, reported successful use of atabrine for treatment of *Taenia saginata* infection in man. Later, several authors[2,4,5] reported the successful use of the drug in human *T. saginata* and *Taenia solium* infections.

This is a preliminary report on the action of atabrine in the elimination of the tapeworms *Taenia pisiformis* and *Dipylidium caninum* from dogs.

PROCEDURE

Mongrel dogs naturally infected with tapeworms were used. The species of tapeworm was determined by examination of segments. Twelve dogs were infected with *D. caninium;* 11 with *T. pisiformis.* Food was withheld from some dogs before treatment. The drug was given orally in gelatin capsules at the rate of 10 mg. or 20 mg. per pound of body weight. Six dogs were given castor oil, at the rate of 0.5 ml. per pound of body weight, two hours after treatment. Six dogs vomited soon after treatment with atabrine. After vomiting ceased, 5 of the 6 dogs were given benzocaine* and twenty minutes later were re-treated with the same amount of atabrine as given in the initial treatment. The dogs were destroyed at different intervals after treatment and the small and large intestines were examined for tapeworms. The intestinal mucosa from dogs destroyed less than twelve days after treatment was examined with a magnifying glass to detect attached scolices.

RESULTS

Atabrine caused expulsion of live tapeworms from all dogs treated. When autopsied, 10 (91%) of the dogs infected with *T. pisiformis* were found to be completely free from tapeworms. One dog that was treated twenty-three days before autopsy had 5 attached worms which were about 5 cm. in length. The dog eliminated a mass of worms but it was not determined whether any scolices were eliminated. The length of the worms found at autopsy suggest that most of the segments had been eliminated, but that the scolices remained intact. Details are given in table 1.

TABLE 1—Elimination of Taenia Pisiformis from Dogs After Treatment with Atabrine

Dog No.	Treatment hours after feeding	Dose of atabrine (mg./lb.)	Other treatment	Days between treatment and autopsy	Tapeworms found at autopsy
3	7	10	.....	1	.....
4	18	10	.....	1	.....
8	12	10	.....	8	.....
9*	15	20	Benzocaine	14	.....
12	24	20	.....	14	.....
13*	24	20	Benzocaine	14	.....
14	24	20	Castor oil	12	.....
15	4	20	Castor oil	12	.....
18	4	20	.....	23	.....
19	4	20	Castor oil	23	.....
22	3	20	.....	23	5

*These dogs vomited and were re-treated.

Ten (85%) of the dogs infected with *D. caninum* were free from tapeworms. One dog (No. 5) found to have 2 tapeworms when autopsied eighteen days after treatment, vomited twenty-five minutes after atabrine was given. The amount of the drug retained is unknown. Two worms and numerous segments were eliminated within eight hours after treatment. The other dog (No. 7) which was heavily infected eliminated a mass of worms soon after treatment and had frequent spells of diarrhea before the autopsy at twenty-one days when 3 worms were found. Two of the worms were about 8 cm. in length; the other was much longer. Details are given in table 2.

All of the dogs defecated and eliminated tapeworms within ten hours after treatment. The worms were stained a deep yellow and were active. The dogs given castor oil had a mild diarrhea which persisted for about twelve hours. There was

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Grateful acknowledgment is made of assistane rendered by Dr. Norman D. Levine in identification of the tapeworms.

*Gastric sedative tablet containing benzocaine, cerium oxalate, and calcium carbonate.

**Winthrop-Stearns, Inc., New York, N. Y.

no evidence of toxicity from atabrine. None of the 5 dogs which were re-treated, after being given benzocaine, vomited after the second dose of atabrine.

Four of the dogs were infected with *Ancylostoma caninum* and one with *Toxocara canis*. Atabrine did not appear to have any effect on these parasites. Only 1 dog (No. 7) had any observable gastrointestinal disturbance which may have caused spontaneous elimination of the tapeworms.

TABLE 2—Elimination of Dipylidium Caninum from Dogs with Atabrine

Dog No.	Treatment hours after feeding	Dose of atabrine (mg./lb.)	Other treatment	Days between treatment and autopsy	Tapeworms found at autopsy
1	7	10	.....	9	.....
2	18	10	.....	9	.....
5*	15	10	.....	18	2
6**	16	10	Benzocaine	12	.....
7**	4	20	.....	21	3
10	8	20	Benzocaine	11	.....
11	8	20	Castor oil	11	.....
16	3	20	Castor oil	12	.....
17	3	20	Castor oil	12	.....
20**	4	20	Benzocaine	23	.....
21	4	20	.....	23	.....
23	4	20	.....	23	.....

*This dog vomited and was not re-treated. **These dogs vomited and were re-treated.

DISCUSSION

The mode of action of atabrine upon *T. pisiformis* and *D. caninum* was not studied. The worms soon became deeply stained with the drug after its administration. It appears to act more rapidly on these tapeworms than on *T. saginata* and *T. solium* in man and *H. fraterna* in mice. Dosage may influence the rapidity of action.

Further trials are necessary to determine optimum dosage and method of treatment. Culbertson[1] found prolonged administration of the drug the procedure of choice in treating mice, while one treatment followed by sodium sulfate is recommended in man. The value of a laxative following atabrine in dogs remains to be established.

SUMMARY

Preliminary observations indicate atabrine may be effective in elimination of *Taenia pisiformis* and *Dipylidium caninum* from dogs. The dosage used was 10 mg. or 20 mg. per pound of body weight.

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Osteoarthritis in Dogs

Five cases of osteoarthritis in dogs are described. In 4, the condition was apparently a sequel to primary or secondary neoplasms of the lungs, while in the young dog it was apparently the result of chronic bronchial pneumonia. The importance of a thoracic examination in cases of osteoarthritis is emphasized.—*Vet. Bull., Sept., 1954.*

Some Uncommon Pathological Findings in the Dog and Cat

ROBERT L. LEIGHTON, V.M.D.

Springfield, Massachusetts

In the daily routine of small animal practice, an occasional rarity or oddity is found. Relatively unimportant in themselves, these occurrences nevertheless should not be completely unnoticed and unrecorded. The following three conditions, therefore, are reported.

Renal Calculus in a Dog.—An aged female Pekingese was presented *in extremis* for euthanasia. It had been treated for an infected uterus but had not responded. A copious vaginal discharge was present. The animal was destroyed and necropsy was performed.

Nothing of importance was found until the kidneys were examined. The left kidney was almost completely destroyed, being reduced to a dilated, pus-filled sac. The right

From the Rowley Memorial Hospital, Springfield, Mass.

The author is indebted to Dr. Joseph M. Stoyak of the hospital staff for the pathology report of the unilateral agenesia of the kidney of the cat, and to Dr. Robert Schwartzman, formerly of our staff, for the report on the congenital absence of the radii in the kitten. He is also indebted to the librarian of the Flower Veterinary Library of New York State Veterinary College, Cornell University, for her reference search.

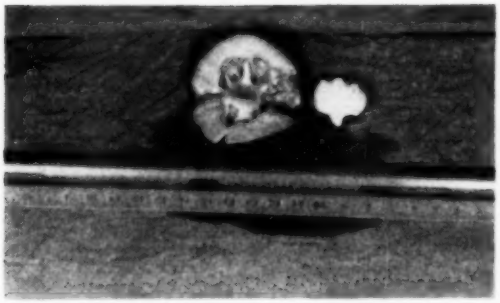

Fig. 1—Opened kidney and renal calculus from an aged female Pekingese. Notice the dilated pelvis and stag-horn calculus.

kidney, while appearing reasonably normal on the outside, contained a calculus which filled the renal pelvis. It was a perfect cast, reflecting all the features of the surrounding tissues (fig. 1).

While the occurrence of renal calculi is not a marked rarity,[1] it was only the third that had been found at this hospital in over fifteen years, and was the first to have filled the renal pelvis so completely.

Fig. 2—Six-week-old Angora kitten with congenital absence of the radii

of the animal. A routine postmortem was performed. All organs and tissues were grossly normal, with no displacement, except that the right kidney was missing, along with the right adrenal gland and

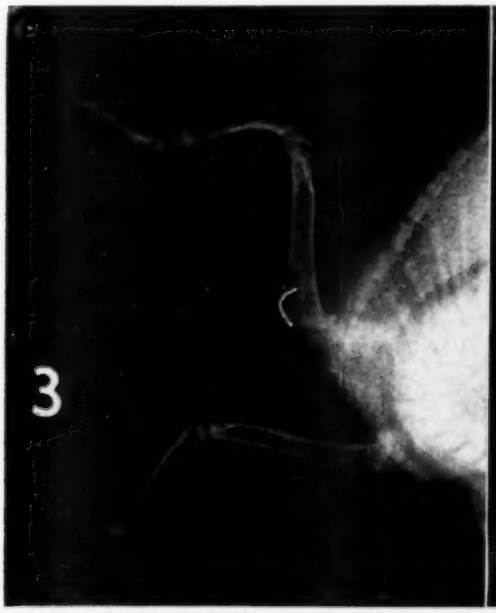

Fig. 3—Lateral radiograph of a 6-week-old kitten with congenital absence of radii.

Fig. 4—Lateral radiograph of a normal kitten, taken for comparison.

Unilateral Agenesia of the Kidney of a Cat.—The patient, a 3-year-old male cat in good physical condition, with a negative medical history, was presented for euthanasia for reasons not involving the health

ureter. The left kidney was slightly enlarged (compensatory hypertrophy) but grossly normal in every respect.

This condition is relatively rare and references are few, although it has been re-

ported in all animals.[2-4] The adrenal gland is normally found but may be absent.[5]

Congenital Absence of the Radii in a Kitten.—A white Angora kitten, 6 weeks of age, was presented for correction of a bilateral deformity of the forelimbs which prevented it from walking properly (fig. 2). Its litter mates were reported to be normal. A radiograph (fig. 3) showed the kitten to be suffering from congenital absence of the radius in both forelimbs, so it was destroyed. Radiographs of a normal kitten were made for comparison (fig. 4).

There are apparently no references to this condition in animals but its occurrence in children offers the orthopedic surgeon a great challenge.

Summary.—Reports of the finding of three rather uncommon conditions in small animals have been made as a matter of record and of interest.

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Fibrosarcoma and Sesame Oil

Sesame oil is employed regularly as a vehicle for such medications as penicillin and hormones which are to be injected into the soft tissues when slow body absorption is desirable. In man, cases have been reported where fibrosarcomas have developed following the injection of penicillin and sesame oil into the soft tissues of the buttocks (*Cancer*, Sept., 1954). Further reports show that many of these oils such as cottonseed oil, lard, olive oil, wheat germ, and croton oil have proved to be carcinogenic substances and produce tumors. Since these spontaneous cases of malignancy have been reported following the injection of these oils in two cases in man and experimentally in animals, it would seem that perhaps this may be a cause of spontaneous malignancy in animal patients. Veterinarians should watch for cases of soft tissue malignancy in animals that have received previous injection of these oily medications. There is good evidence that these lesions may exist in animal patients.—W.H.R.

Diseases of Goldfish

All diseased fish should be isolated and treated separately. When a fungous growth occurs where a few scales have been lost, paint the area with iodine or mercurochrome, then place the fish in a solution of salt water until healed. For a salt bath, take water from the original aquarium and add 1 tablespoonful of salt to each quart. "Mouth fungus," in which the mouth becomes white, is a bacterial infection which responds when 250 mg. of aureomycin® is added to the water; when the symptoms disappear, salt is added for a few days. "Tail rot" and "fin rot" respond to the same treatment.

Dropsy, a condition in which the fish seem to bloat until the scales stand on end, is incurable. Fish lice, many-legged insects that cling to the body and suck blood, should be removed with tweezers, the area painted with mercurochrome, and the fish placed in a salt bath until the areas heal. The salt bath will also kill young parasites which may not be visible.

For constipation, indicated when the excreta does not hang in long black strings, or when it is knotty, place the fish in a bath containing 1 teaspoonful of Epsom salts per quart of water and increase the live or green food. Goldfish should be handled with a net as grabbing may injure them.—*All Pets Magazine, Sept., 1954.*

Chloramphenicol Excretion in Bile

When chloramphenicol was given orally to dogs, it soon appeared in the blood and, after two hours, in the bile. Carried from the intestine in the portal vein, some passed to the main circulations through the hepatic vein but more was absorbed by the liver and excreted with the bile, where it was again picked up by the portal circulation and returned to the liver. This enterohepatic circulation has practical importance in the treatment of cholangitis, cholecystitis, and other hepatic infections.—*Brit. J. Pharmacol. and Chemo., Sept., 1954.*

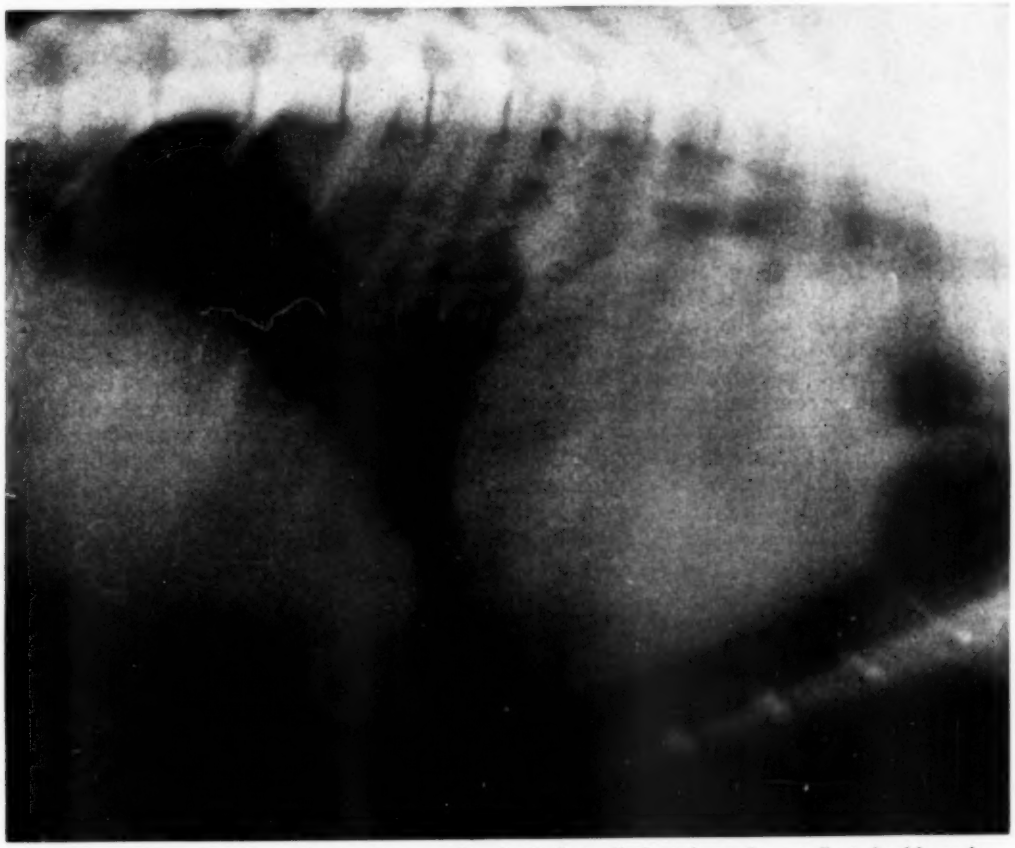
What Is Your Diagnosis?

Radiograph Offered for Your Study and Diagnosis

Because of the interest in veterinary radiology, the JOURNAL publishes this month, and will continue to do so for the next several issues, a case history and accompanying radiographs depicting a diagnostic problem.

Our readers are invited to submit case histories, radiographs, and diagnoses of interesting cases which are suitable for publication.

Make your diagnosis from the picture below — then turn the page ▸



History—A female, 10-month-old German Shepherd (mixed) had been in excellent health and had developed normally. It had been wormed and vaccinated against distemper. The dog was well until four days before admission when it was believed it developed a cold. At the time of admission, the owner reported finding the dog sitting in a lane a short distance from the house in great respiratory distress suggestive of a diaphragmatic hernia. The owner denied any possibility of the dog having been hit by an automobile or injured in any way. No abrasions or superficial lesions could be found. The dog died three hours after admission.

(Diagnosis and findings are reported on next page)

Here Is The Diagnosis

(Continued from preceding page)

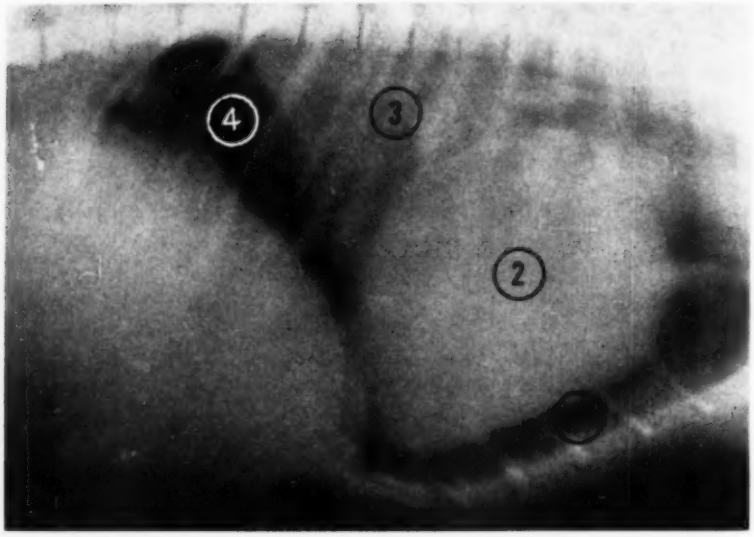


Fig. 1—Radiograph showing the changes caused by the pneumothorax: (1) air in the thorax; (2) heart; (3) compressed lung; (4) air in the dorsoposterior part of the chest cavity.

At necropsy the pleural cavity was found to be filled with air. There was extensive atelectasis of both lungs. The anterior and middle lobes of both lungs showed large areas of emphysematous defects. No pneumonia was found.

Comment from the Armed Forces Institute of Pathology: "True congenital cysts are extremely rare in man and one would suspect that they are equally rare in the dog. This dog undoubtedly had cystic disease of the lungs, cysts being formed by dilated terminal bronchioles. These defects undoubtedly did not interfere with the health of the animal until one ruptured, causing spontaneous pneumothorax and atelectasis. This case is coded as 'local bullous emphysema, etiology undetermined.'"

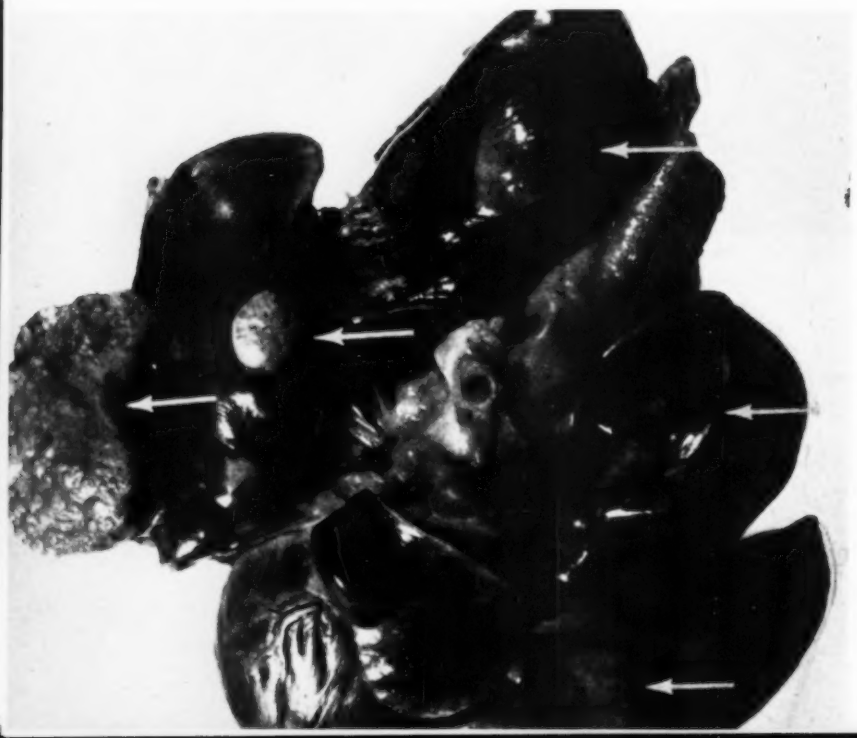


Fig. 2—Heart and lungs showing emphysematous defects (arrows) on the anterior and middle lobes of the lungs.

A Report of Two Canine Cases of Nocardiosis in Missouri

W. P. BLAKE, D.V.M.

Columbia, Missouri

This is a brief account of nocardiosis in the dog with two case reports from the clinic at the School of Veterinary Medicine, University of Missouri.

Cases of nocardiosis in dogs have been reported since the latter part of the nineteenth century. There has been much confusion as to the name, classification, and nomenclature of this species of the family Actinomycetaceae[1] but the present accepted name for this organism is *Nocardia asteroides*.

Nocardiosis is an acute or chronic infectious disease of granulomatous or suppurative nature caused by an aerobic, gram-positive, inconstantly acid-fast species of the family Actinomycetaceae.[2] The organism may be isolated from the soil. Its mode of entry to the animal's body is not known, but since lesions of the disease are commonly found in the thorax it is thought that possibly it is an airborne disease. There is no record of transmission from animal to man, or from man to man.[1] The mycelial filaments found in the pus may be aggregated to form "sulfur granules" and are generally gram-positive and acid-fast. These characteristics differentiate it from *Actinomyces bovis*. Some of the synonyms for *N. asteroides* are *Actinomyces baudeti, Actinomyces bicolor, Actinomyces canis, Actinomyces israeli, Cladothrix canis, and Cohnistreptothrix canis*.[2]

Nocardiosis is characterized by weakness, loss of weight, muscular soreness, lameness, edema of the extremities, dyspnea, depression, and moderate to high fever.

Many of the cases reported were tentatively diagnosed as the "distemper complex." Roentgenograms may show multiple radiopaque areas in the thorax. Two types may be seen: (1) the cutaneous type in which tumor-like growths are seen over the body; and (2) the subcutaneous form characterized by granulomatous tissue undergoing a puriform transformation, and pus-filled sinuses. In these two types, the infection is usually confined to the neck and extremities but may involve the thorax and abdomen. Also, according to some authors, the regional lymph glands show a lymphadenitis, but suppuration is seldom seen.[2] One case of oral nocardiosis and 2 of the nervous system have been reported.[2] There also have been cases reported in cats.[4]

The main lesions, on postmortem, are granulomatous masses with multiple abscesses of the lymph tissue. Gray opaque nodules may be found throughout the parenchyma of the lung, pancreas, kidneys, spleen, and liver, and petechial and ecchymotic hemorrhages in the lungs. Other findings include empyema, with up to 500 ml. of pus; pleurisy; areas of consolidation; splenomegaly; and hepatomegaly with abscesses. The clinical picture of chronic peritonitis is common. Edema of areas is frequently seen.

Definite diagnosis depends on histological smears or sections demonstrating "sulfur granules" in the exudate. Several authors agree that these sulfur granules are not the typical rosette formations seen in bovine actinomycosis, but mycelial masses without club formation.[2] Here, at the School of Veterinary Medicine in the University of Missouri, we culture the exudate from the lesions on tryptose or blood agar for forty-eight hours at 37 C. White, dry, hard colonies are formed and these are put in a slant and sent to the Public Health Laboratory, Chamblee, Ga.,* for identification.

Treatment has not been effective. If possible, surgical debridement with the application of iodine might prove helpful.

Case Reports

Case 1.—A 3-month-old male Cocker Spaniel was brought to the clinic on Nov. 11, 1953. He had been under treatment for a week because of dyspnea, soreness over the entire body, and a temperature ranging between 103 and 104 F. In spite of treatment, the condition became progressively worse and the pup died on the sixth day. The condition was diagnosed as pneumonia.

Necropsy revealed only a catarrhal enteritis, focal interstitial nephritis, enlarged bronchial lymph glands filled with pus, and a large area of consolidation in the lungs. Cultures of the kidneys were identified as *N. asteroides*.*

Case 2.—A 6-month-old male Collie was admitted to the clinic on Nov. 26, 1953. He, also, had been under treatment for "distemper complex" for several days. His symptoms were dyspnea, anorexia, rhinitis, conjunctivitis, depression, diarrhea, and a temperature of 105 F. Treatment was ineffective and he died on the third day.

Necropsy findings were: hemorrhagic enteritis; focal areas of necrosis, 5 mm. in diameter, in the kidneys; 500 ml. of pus in the thoracic cavity; multiple abscesses in the lungs; and bronchial lymph nodes filled with pus. The actinomycete obtained from this animal was also identified as *N. asteroides*.*

From the Department of Veterinary Medicine and Surgery, University of Missouri, Columbia.

*The author thanks Dr. L. Ajello of Chamblee, Ga., who identified the organism, for suggestions pertaining to the mycological discussion in this paper.

CONCLUSION

From the literature on nocardiosis, it appears that this disease may occur more often than we suspect since most of the conditions identified mycologically as nocardiosis had been diagnosed as the distemper complex. It is possible that nocardiosis itself may rarely be fatal but that it is a complicating factor to some other disease when it is found. When we injected the exudate from Nocardia lesions into dogs, subcutaneously, an abscess formed but it soon ruptured, drained, and then immediately disappeared. This suggests that the condition either is hard to reproduce or that healthy dogs are resistant.

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Canine Hepatitis Virus Propagation

The successful serial propagation of the virus of infectious canine hepatitis, by the roller tube method, in canine kidney tissue culture through 15 consecutive passages is reported. The tissue culture virus was identified both by the complement-fixation and serum-neutralization methods.—*Vet. Bull., Sept., 1954.*

War Dogs in Malaya

War dogs of two types — "patrol dogs" that work on air scent and hearing to give silent warnings of persons by "pointing," and "tracker dogs" that follow human ground scent — have been used in Malaya by the British army for two years. Only male dogs of three breeds are used. The Alsatian undoubtedly is the best when used both for patrolling and tracking, but the Labrador is excellent at tracking. Dobermann Pinschers are used on an experimental basis. Initial training is done by the Royal Army Veterinary Corps but the dogs are used by the infantry. In the jungle regions, these durable dogs have an intangible morale-raising effect on the patrols since they make it virtually impossible for them to be ambushed.—*J. Royal Army Vet. Corps, June, 1954.*

Leptospirosis in Veterinarians

A large animal practitioner suddenly became ill with extreme weakness and fever. After being hospitalized he resumed practice in ten days but was easily fatigued for several weeks, and in two months his blood reacted to the agglutination lysis test for *Leptospira pomona* in a dilution of 1:10,000; at five months it was 1:512, and at fifteen months, 1:100. Prior to illness he had treated several herds of cattle where leptospirosis was suspected but not serologically confirmed. Following his illness agglutination lysis reactors were found in both cattle and hogs in the area.

In January, 1953, blood samples were drawn from veterinarians attending an Iowa meeting. Tests on 140, representing 75 Iowa counties and seven neighboring states, revealed 23 with some degree of reaction to *L. pomona* and in each case a reaction as high or higher to *Leptospira canicola*. Of 20 blood specimens selected from residents of an Iowa mental hospital, eight reacted to both *L. canicola* and *L. pomona* and one to *L. pomona* alone.—*J.Am.M.A., Sept. 25, 1954.*

Periodic Ophthalmia and Leptospirosis

A higher percentage of positive serological reactions to pathogenic leptospirosis in horses with periodic ophthalmia (17 of 25 cases) than in normal horses (71 of 575 cases) is reported from Germany. Nevertheless, leptospiral transmission experiments in 7 horses failed to produce typical ocular lesions.—*Vet. Bull., Aug., 1954.*

Weil's Disease Reported in Georgia.—Nine cases of Weil's disease (spirochetal jaundice) were diagnosed by agglutination tests in Georgia. All were in persons subject to skin abrasions and possible contact with rats and dogs which might be carriers of *Leptospira icterohaemorrhagiae.*—*J.Am.M.A., Oct. 16, 1954.*

X-Ray Therapy in Labial and Cutaneous Granulomas in Cats

ROBERT B. McCLELLAND, D.V.M.

Buffalo, New York

CHRONIC, ulcerating, granulomatous lesions* of the lip and skin of cats have been a clinical problem for many years.[1] The cause is unknown. Three bacteriology laboratories** found gram-positive cocci in pairs both in smears and tissue sections. Upon culture, *Bacterium proteus, Staphylococcus aureus,* and *Streptococcus hemolyticus* were recovered. The Cornell Virus Research Laboratory (Ithaca, N.Y.) concluded that the disease was not viral.[2]

The condition seems to appear spontaneously in the majority of cases; however, a few indicate the possibility of transmission. In one instance, 3-month-old twin kittens showed lesions of the lips which seemed to have been transmitted from a similar sore on the breast of their dam. On two occasions, cats in the same household developed the disease simultaneously. Anatomical location of skin lesions left no room to doubt

Fig. 1—Labial granuloma in a cat.

Dr. McCelland is a small animal practitioner in Buffalo, N. Y.

*This condition is commonly, but erroneously, called "rodent ulcer." Rodent ulcer is an epithelioma of the face or lips; the lesions in the cat are not neoplastic.

**Columbus Hospital, Millard Fillmore Hospital, and Buffalo General Hospital, all of Buffalo, N. Y.

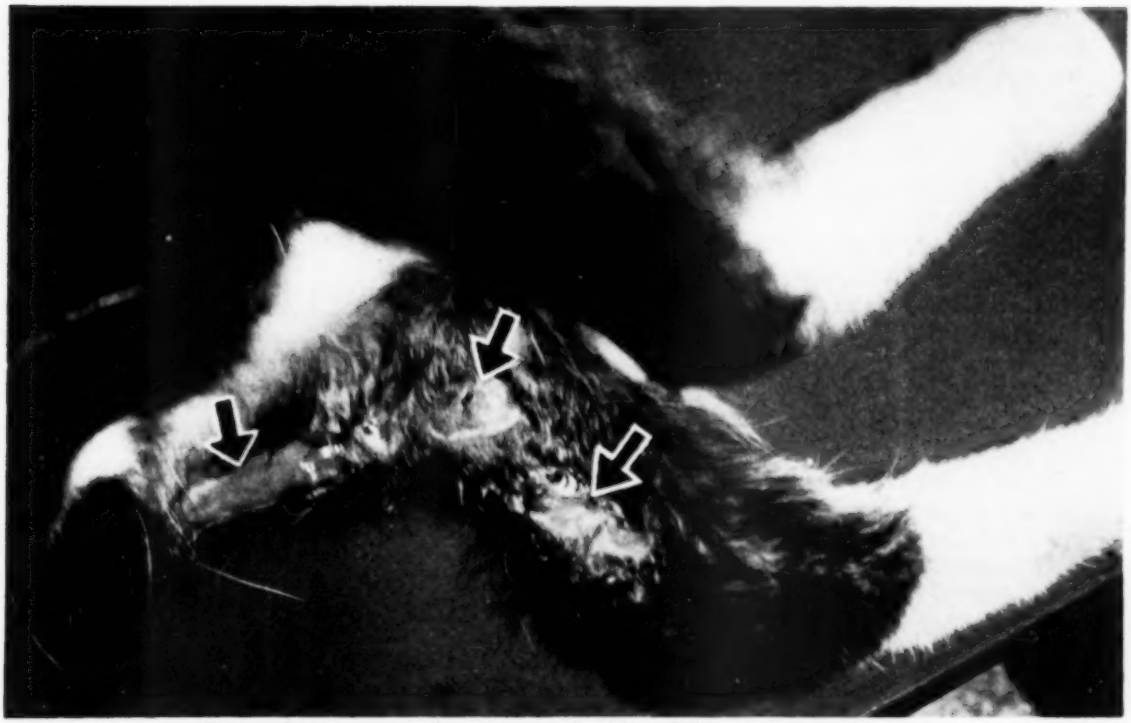

Fig. 2—Cutaneous granulomatosis on a hind leg of the cat shown in figure 1.

TABLE 1—Results of X-Ray Therapy for Labial Granuloma in Cats

Case	Age	H.V.L.	Fractional doses	r's per dose	Interval (days)	Total r's	Results
1	3 mo.	0.35 mm. Cu	1	150	0	150	Rapid recovery.
2	3 mo.	0.35 mm. Cu	1	150	0	150	Rapid recovery.
3	4 yr.	0.35 mm. Cu	3	500	7	1,500	Slow recovery.
4	1 yr.	0.35 mm. Cu	2	300	7	600	Complete 3rd week.
5	4 mo.	0.35 mm. Cu	2	300			
				150	7	450	Recurred in 60 days.
				150		150	Complete recovery.
6	1 yr.	0.35 mm. Cu	3	300			
				150	7	600	Complete recovery.
				150			
7	3 yr.	0.35 mm. Cu	2	150	1	300	Complete recovery.
8	4 yr.	0.35 mm. Cu	3	150			
				300			
				300	30	750	Recurred in 6 months.
			5	150	7	750	Complete recovery.

autotransmissibility; lesions on the perineum and ventral surface of the tail met perfectly.

Skin and lip lesions appeared simultaneously in 2 of the 12 cases reported here.

The disease responded readily to x-ray therapy.

PHYSICAL DATA

In cases 1 through 8 (tables 1 and 2) a Brache-Seib generator was employed. To produce a half value layer (H.V.L.) of 0.35 mm. Cu, the unit was operated at 120 kv.p. (kilovolt peak), 4 ma. (milliamperes) with filters of 1.0-mm. Al and 0.25-mm Cu. To produce a H.V.L. of 1.0-mm. Al, it was operated at 100 kv.p., 4 ma., with no filter.

In cases 9 to 12 (table 2) a General Electric KX-10 unit was used. With no filter, 100 kv.p., 5 ma., an H.V.L. of 1.7-mm. Al was generated.

In all cases, a focal skin distance of 20.0 cm. and a suitable cone were employed. All doses mentioned were measured on the skin with backscatter.

In case 3 (table 1), the slow recovery may have been due to overdosage. The fractional doses of 500 r (roentgens), H.V.L. 0.35 mm. Cu, caused slight edema at the margin of the lesion. However, no epilation was produced. The optimum dose seemed to be 150 r to 300 r, with totals ranging from 150 r to 750 r. Glenney[3] obtained excellent results in two cases of labial granuloma by administering 300 r to 600 r of x-radiation with an H.V.L. 2.0 mm. Al.

The interval between treatments should not be longer than ten days; the thirty-day interval in case 8 (table 1) probably predisposed the patient to a recurrence of the condition.

Softer radiation, H.V.L. 1.0 to 1.7 mm. Al, was used on the skin. As erythema-producing doses are approached more rapidly with this quality of radiation, smaller fractional doses were administered. The results were gratifying (table 2).

TABLE 2—Results of X-Ray Therapy of Cutaneous Granuloma Lesions in Cats

Case	Age	H.V.L.	Fractional doses	r's per dose	Interval (days)	Total r's	Results
7	3 yr.	1.0 mm. Al	2	100	1	200	Complete recovery.
8	4 yr	1.0 mm. Al	3	100	7	300	Complete recovery.
9	8 mo.	1.7 mm. Al	3	100	7	300	Complete recovery.
10	3 yr.	1.7 mm. Al	2	200	10	400	Complete recovery.
11	1 yr.	1.7 mm. Al	3	150	7	450	Complete recovery.
12	3 yr.	1.7 mm. Al	3	150	7	450	Complete recovery.

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Nodular Hyperplasia in Dog Spleens

Nodular hyperplasia of the spleen in 10 dogs of all ages is described. The nodules did not display neoplastic features and conformed in general with those described in the textbooks of special pathology (Joest, 1929). Toxic factors and inflammatory processes outside the spleen possibly influence the formation of these nodules which are more common in older than in young dogs.—*Vet Bull., Sept., 1954.*

Hannon 44.1

An Acute Upper Respiratory Infection of Dairy Cattle

ROBERT J. SCHROEDER, D.V.M., and M. D. MOYS, D.V.M.

Los Angeles, California

A DISEASE of dairy cattle involving the upper respiratory tract, and characterized by high fever and sudden cessation of lactation, appeared suddenly in the Los Angeles, Calif., area on Oct. 17, 1953. In the following four months, 52 premises are known to have been infected in the Los Angeles milkshed. In January, 1954, it also occurred in other counties, eight of the affected herds being about 25 miles away and one herd, in the upper San Joaquin Valley, over 300 miles distant. When the Los Angeles County Livestock Department and the California State Bureau of Livestock Control were notified, by a practicing veterinarian, that a disease of dairy cattle not seen previously in this area had been encountered, they acquainted the other practicing veterinarians and the dairymen with the symptoms and urged them to report any similar cases immediately.

Each premise reporting infection was visited by veterinarians from the above-mentioned departments. Detailed records were made of the dairy's location, the number, sex, and age of animals kept on the premises, the date of first sickness, and the number of affected animals in each of the above-named categories. The symptoms, type of feed, and any recent animal importations or movements were also recorded.

The disease resembled infectious bronchitis in cattle, as described in Hutyra, Marek, and Manninger.[1] Enzootics of this type have also been reported in Germany, Denmark, Bohemia, Austria, Italy, France, Switzerland, and Japan.

The similarity to gastroenteritis, as defined by Olafson *et al.*,[2] and mucosal disease of cattle, described by Ramsey and Chivers,[3] was considered. However, diarrhea was not in evidence except in severe cases and then only shortly before death. Of 13,108 animals in the 52 affected herds, 1,002 (7.6%) became infected and 30 died. Of the 1,002 infected animals, 971 were lactating cows; the others were: 17 dry cows, 7 heifers, 2 bulls, 1 steer, and 4 calves.

From the Bureau of Livestock Disease Control, Division of Animal Industry, California Department of Agriculture, Los Angeles.

ETIOLOGY AND TRANSMISSION

For transmission experiments (*see* p. 473), 5 dairy calves were purchased and held in isolation. Four were inoculated with various tissues and exudates from naturally infected animals and 1 was uninoculated but exposed by contact. In thirty-two to seventy-two hours, all exhibited symptoms characteristic of the natural outbreaks and 3 were destroyed for postmortem examination. The lesions were similar to those found in the natural cases, indicating that the disease was reproduced by inoculation and contact. However, in spite of considerable laboratory investigation, the cause of the disease is as yet undetermined.

Feed, at first suspected by many dairymen, was readily eliminated as a cause. In the majority of instances, no recent herd additions had been made and, even though the close proximity of dairies in the Los Angeles milkshed were conducive to spread of disease by contact, most cases occurred sporadically. When, as was true in several instances, neighboring dairies were affected, the time lapse between initial dates of infection varied from one day to more than two months.

SYMPTOMS

In lactating cows, the first evidence of infection was a sudden, drastic drop in lactation, ceasing completely in twenty-four to forty-eight hours.

In the average infected herd, 3 or 4 animals would suddenly become sick, then for two to six weeks (ave. 17 days), 1 or more new cases would develop almost every day.

Temperatures varied from 102 to 108 F. but were usually 104 to 106 F. A slight rise in temperature was usually noticed shortly prior to the decrease in lactation.

Approximately half of the affected animals ceased ruminating and refused to eat, while the appetite of others remained fairly good until the onset of visible respiratory symptoms. When the course of the disease

was protracted, there was a marked loss of condition.

Excessive salivation occurred commonly and occasionally a peculiar grinding of the teeth was observed.

The mucous membrane of the nares was inflamed and a stringy mucus, which later became mucopurulent, was discharged from both nostrils. Respiration was shallow and rapid (30 to 60 per minute) and a short, explosive cough was characteristic of the disease. Pain was not evident on tactile percussion, and auscultation revealed no abnormal sounds in the early stages.

Although the character of the feces was closely checked, diarrhea was not observed except in animals near death. Several owners reported that the cows seemed to be constipated shortly before the onset of visible symptoms.

The mucous membrane of the eyes appeared normal, and no lacrimation was observed. There was considerable variation among individual animals both as to severity and duration of the clinical manifestations. In the majority of treated cases, the return to normal was fairly rapid (approximately 1 week). Usually, all evidence of the acute phase disappeared in less than one month.

In a few cases, symptoms of acute respiratory distress and pulmonary emphysema were exhibited, 1 cow having a subcutaneous emphysema from the shoulders, along the back, to the gluteal region. The prognosis for such cases was unfavorable. Some died; others, that failed to return to preinfection condition or production, were sent to slaughter.

POSTMORTEM LESIONS

The most prominent and characteristic lesion was a severe hemorrhagic tracheitis and bronchitis, varying from petechiation and ecchymosis to a diffuse hemorrhagic inflammation of the entire surface of the mucous membrane.

Necrotic lesions, approximately ¼ inch in diameter, were scattered throughout the larynx and pharynx and the tissues surrounding this area were extremely edematous.

Other lesions observed included extensive alveolar emphysema, red hepatization of the lungs, hemorrhagic sinusitis, severe enteritis of the small intestines, mucoid enteritis of the large intestines, and impaction of the omasum and colon.

TREATMENT

Various medicinal treatments, including combinations of antibiotics and intravenous sulfonamides, were employed by practicing veterinarians. Penicillin and intravenous sulfapyridine were often used at the onset, with aureomycin® given intravenously to those animals which did not respond to the early therapy.

The response to all therapy varied widely, a few individuals improving rapidly, others retaining high temperatures for several days and remaining off feed despite repeated treatments. While there was some doubt as to the efficacy of this therapy, the mortality seemed to be materially reduced and animals returned to normal production more frequently when these agents were properly used.

Supportive treatment should include a light laxative ration and, because of the tendency toward pulmonary emphysema, the animals should be kept quiet.

Like it began, and without explanation, the disease subsided and disappeared.

SUMMARY

An acute upper respiratory infection of dairy cattle, characterized by high fever and sudden cessation of lactation, appeared in the Los Angeles, Calif., milkshed in the winter of 1953-1954. The mortality was low but there was considerable loss in milk production and from cows which failed to return to normal production.

The etiology of the disease is undetermined but investigations indicate that it is infective and possibly is caused by a virus or a virus-like organism.

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Four-H Heifers Die in Freak Accident.—Enroute to the Iowa State Fair, a 4-H Club girl lost 2, 16-month-old heifers when the end gate of the truck was lost and the heifers fell out and were strangled by their tie ropes.—*Aberdeen Angus J., Oct., 1954.*

Experimental Studies of Acute Upper Respiratory Infection in Calves

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CALF INOCULATION studies by the California Department of Agriculture and the Los Angeles County Livestock Department were a part of the comprehensive disease investigation into the epizootic of upper respiratory disease among cattle in the Los Angeles milkshed in late 1953.

An attempt was made to reproduce the disease complex as observed in dairy cattle and to collect data which would contribute to our information concerning the etiology and incubation periods.

MATERIALS AND METHODS

Five dairy-type calves were purchased and isolated on clean premises. Two were 6-month-old, 425-lb. bull calves from Utah, purchased at a stockyard Dec. 8, 1953; 3 were heifer calves, approximately 4 to 6 months old, purchased ten days later on nearby premises. The 3 heifer calves were destroyed for necropsy on January 5, when the experiment was terminated.

Calf 1, a dairy-type bull, with normal preinoculation morning and evening temperatures and 10.9 Gm. of hemoglobin per 100 ml. of blood, was inoculated the morning of December 14 with 2.0 ml. of defibrinated blood pooled, prior to any treatment, from 11 typical cases in two herds. Approximately 1.5 ml. was injected subcutaneously, 0.5 ml. was given intradermally in the same area, and several drops were placed in one conjunctival sac. To insure adequate exposure, this calf was also given, orally, approximately 2 oz. of feces taken from the same cows as the blood samples. The calf developed an intermittent temperature — 103.5 F. on the afternoon of December 15; 103.0 F. on December 21; and 103.5 F. on December 26. On December 15, the white blood cell count was nearly 6,000. A copious nasal discharge was observed on December 20 but not again until December 28.

An increased rate of respiration was observed from the day after inoculation until the observations ended on January 4.

Calf 2, also a dairy-type bull, developed, during the preinoculation period, the general symptoms of a mild shipping fever complex but recovered and was inoculated on December 19. For this inoculation, 2.0 ml. of blood from cows in the early febrile period was used—1.0 ml., subcutaneously; 0.5 ml., intradermally; and the remaining portion was placed on the conjunctival and nasal mucous membranes.

A febrile response occurred thirty-two hours after inoculation, accompanied by a mild leukopenia. The white blood cell count increased steadily to 12,250 on December 25, then decreased. Ulcers were first observed on the dental pad, gums, and the ventral surface of the tongue on December 25, becoming more numerous soon after but at no time seeming to incapacitate the animal. The lesions began as pinhead-sized, white, avascular, slightly elevated areas surrounded by a narrow (1/16-in.) ring of inflammation which, within twenty-four hours, increased in diameter to form a disc approximately 1/8 inch in diameter. A pinpoint necrotic area soon appeared in the center and expanded rapidly until the avascular disc was reduced to a narrow, white band surrounding a necrotic area approximately 1/4 inch in diameter which, in turn, was surrounded by a narrow band of inflammation. The largest lesions noticed were 1/2 by 1 inch. About December 31, the commissures of the lips became involved and two or three lesions extended beyond the oral membranes into the hair of the lower lip. By January 4, when the observations terminated, the early mouth lesions were healing and all other symptoms had subsided.

Calves 3, 4, and 5 were not observed during the preinoculation period and, since the premises were then considered contaminated, the initial inoculations were begun at once on December 18.

Calf 3 was inoculated with pooled sputum and nasal material collected from sick cows in two dairies. It received 3.0 ml. of this material intramuscularly, 2.0 ml. on the nasal mucosa, and a few drops on the conjunctiva within one hour after the material was collected. In two days, the calf had a mild leukopenia, inappetence, and a temperature of 103.2 F. which rose to 105.0 F. the next day, with a secondary rise to 104.8 F. on December 24. A pronounced variation between morning and evening temperatures continued until the calf was destroyed on Jan. 5, 1954. Other symptoms observed included a cough and a copious nasal discharge, December 25 to 31, and a slight diarrhea on December 27. There was a gradual rise, then fall, in white blood cells with a high of 11,500 on December 30 when the hemoglobin determination was 8.8 Gm./100 ml. of blood, which is in the low normal range.

Calf 4 was inoculated, on December 18, with chicken egg embryo material (whole ground) from a third blind passage of penicillin- and streptomycin-treated sputum and nasal exudate which originated from clinical cases. It received 5.0 ml. intramuscularly and 3.0 ml. divided between the nasal mucosa and the conjunctiva.

On December 21, there was a mild leukopenia

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and a temperature of 103.4 F., with a secondary rise to 105.0 F. on December 27 to 29. A leukocytosis of 16,650 accompanied the second febrile response. Dysphagia and a cough commenced on December 28 and a nasal and ocular discharge on the next day, with a pronounced recovery after January 1.

Calf 5 was placed in the same pen with the others on December 18, but received no inoculation. On December 21, its temperature rose to 103.8 F. with a secondary rise to 105.2 F on December 25 and 26. A decrease in white cells was recorded on December 22; a slight cough and mucopurulent discharge, December 25 to 31; and a slight diarrhea on December 26.

CONCLUSION

The postmortem lesions in calves 3, 4, and 5 were essentially the same: red hepatization of the cardiac lobes of the right lungs with mucopurulent material occluding the smaller bronchioles; moderate scattered petechiation of the tracheas, more profuse anteriorly; congestion of the sinuses and nasal passages, petechiae and ecchymosis on the epiglottides. In 1 calf, extensive petechiation of the mucosa was found between the root of the tongue and the epiglottis and another had edema in the tissues around the larynges and pharynges. Each calf had some swollen and hemorrhagic lymph nodes, usually the mandibular, retropharyngeal, and parotid nodes, and in 1 calf the mesenteric nodes were involved. In 2 of the calves, there were numerous small ($\frac{1}{8}$ in.) white lesions over the mucosa in the central portions of their abomasums and a few ulcers near the duodenal openings. One calf had ulcers on the posterior third of the hard palate. Other lesions were a slight congestion of the capsular vessels of the parietal surface of the spleens, with some petechiation in the subserosa along the hilus, and cloudy swelling of livers.

Enterocolitis and Antibiotics

Enterocolitis in man is not new but is more common in recent years. Although it is occasionally absent, an antibiotic-resistant *Staphylococcus aureus* is prominent in the bowel content and lesion of such cases, sometimes in pure culture, and the normal bacterial flora often is suppressed or eliminated. The term "pseudomembranous" Staphylococcus enteritis has recently been applied to such cases.—*Am. J. Surg., Oct., 1954.*

Observations on a Newcastle Disease Enzootic in Haiti

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The control of poultry or other diseases in Haiti is difficult because the poultry and livestock management and husbandry practices are primitive, for the most part having been the same for a century. Poultry run wild over the countryside, with human and animal excrement furnishing no small amount of their food. Most of the fowl are of the game variety and can fly very well. Many chickens make their nests in trees and roost there. Other types of livestock are also allowed to roam free to find food.

Newcastle Disease Outbreak Reports.—During December, 1952, reports were received by the Haitian Department of Agriculture that Newcastle disease was believed to exist in the Port-au-Prince market. Previous to this, the government model poultry flock had been vaccinated with Newcastle disease live virus vaccine. That the disease would spread was inevitable. All types of produce are brought to the markets on the heads of *marchandes* or on burros. Fowl are usually tied together and placed in straw baskets or slung over the shoulders of *marchandes* and taken to town. At the market, many fowl are traded and return to the country again. Traders may come from all over the main island and the satellite island of La Gonave.

Later, the Department of Agriculture began receiving disease reports from outlying districts. When peasant trails were followed and charted on a map showing locations of infectious diseases, the data revealed that Newcastle disease outbreaks occurred in towns and villages along peasant routes to market areas before they occurred in towns and villages on main routes that did not have a market day. Children thought the chickens, with their circling, tumbling, and other nervous manifestations, were comical and played with them. Within one month, reports of the disease came in from extension agents all over the country. Intranasal and wing web vaccine (12,000 doses) was purchased by the Department of Agriculture and sent to

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several areas under refrigeration, where it was handled by extension agents, teachers, agronomists, and others. The disease soon had become enzootic in all areas infected, including two satellite islands, and raged for two months before it began to subside, finally dying out at the end of March, 1953.

Methods of Disease Spread.—Hundreds of birds which died were used by *houngans* (voodoo priests) to be hung in trees to indicate location of voodoo ceremonies, or to create a stench and keep trespassers off private property. Thus, airborne infections were facilitated. The disease was exceedingly virulent from the beginning, the virulence not appearing to increase during the enzootic. When introduced in a small village in the interior, 100 per cent mortality was not unusual, the average probably being from 75 to 100 per cent. Young ducks, turkeys, and goslings likewise succumbed to the disease. The mortality of one flock of ducklings was 100 per cent. Peasant travel, perhaps, contributed the greatest source of spread. Game or fighting cocks also contributed to the enzootic, as cockfighting is a nationwide sport. Many game cocks were also vaccinated and then transported to fighting rings.

The Newcastle disease virus in Haiti caused a rather severe conjunctivitis in human beings and possibly a meningitis in infants. This virulent type should probably, therefore, not be considered entirely as an agricultural economic problem since public health aspects may likewise be involved. Further research is needed with this virulent type of the virus. The eye infections among adult Haitians has been severe, requiring medical attention for about a week. The meningitis observed in peasant infants may or may not have been a coincidence.

The poultry autopsy findings included evidence of septicemia, congestion, gut hemorrhages, and ulcerations. These resemble the Newcastle disease seen in the Orient rather than that which is common to the United States. With few exceptions, birds which had been vaccinated with wing web vaccine were immune to the disease. This virulent type of the disease is believed to be prevalent in Mexico, Caribbean and Central American countries, and possibly some South American countries. Precautions should be taken to prevent its introduction into the United States.

Bovine Dystocia Due to Hydrocephalus

On Aug. 9, 1954, a 6-year-old grade Jersey cow was in labor, with both front feet of the fetus showing. Examination revealed an average-sized fetus with an enlarged head which could not pass through the pelvic canal. A monstrosity of the hydrocephalus type was suspected but, since it was desired to have the calf intact if possible, embryotomy was avoided.

Fig. 1—Fully developed, full-term calf with subdural hydrocephalus.

Obstetrical chains were attached to both front legs and to the lower jaw and delivery was accomplished by slow, steady traction. The fully developed, full-term calf was normal in every way except for the soft enlargement on the head (fig. 1). Postmortem examination revealed a subdural hydrocephalus apparently due to protrusion of the dura mater through the anterior neuropore.—*Charles W. Chadwick, D.V.M., Jackson, Miss.*

Heavy Cattle Loss from Toxaphene

When a toxaphene preparation, intended only for plants, was recently used as an insect spray on 72 cattle in northern Kentucky, 44 head died in about twenty-four hours. Dr. R. D. Radeleff from the U.S.D.A. station at Kerrville, Texas, traveled by plane to confirm the diagnosis. Not only was it the wrong type of toxaphene but the solution was twice as strong as recommended.—*Courier J., Louisville, Ky.*

Turkey Ornithosis. I. A Report of Natural and Experimental Infections

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ORNITHOSIS was first suspected in turkeys in Texas when workers contracted the disease in a poultry-dressing plant in 1948.[1] The disease was diagnosed in turkeys by Boney, Grumbles, *et al.*[2] in 1952. They isolated an agent which was identified as ornithosis by Dr. Morris Pollard, University of Texas Medical Branch, Galveston. Later, this strain of virus was studied by Dr. K. F. Meyer of the Hooper Foundation for Medical Research, University of California.

The lesions described by Boney *et al.*[2] were those associated with a lower respiratory disorder consisting of thickened air sacs, pericarditis, and an enlarged, grayish, mottled liver and spleen—a pathological picture somewhat similar to that of the lower form of turkey sinusitis, commonly referred to as the "air sac syndrome," which occurs in both chickens and turkeys.

The purpose of this report is to describe the characteristics of the disease as it occurred in naturally and experimentally infected turkeys. The naturally infected birds were from various flocks of 500 to 1,500 birds each, in an extensive outbreak, involving 15 or more farms, which occurred in the spring and summer of 1954. From 1 to 4 birds were autopsied from each of ten of these flocks. Virus isolations were made from eight of the flocks using various tissues (spleen, 5 cases; pericardial and peritoneal exudates and liver, 1 case each). Tissue suspensions were made in nutrient broth and 0.2-ml. quantities were inoculated into each of 5, 6- to 9-day-old chicken embryos.

For this study, 25 normal 12-week-old Beltsville Whites were divided as equally as possible, as to sex and general conditions, into five groups. The 5 birds in each group were inoculated by the following routes: (1) intratracheal, (2) intraperitoneal, (3) intravenous, (4) intra-air sac (thoracic); and (5) oral. The virus used in this study was from one of the isolations mentioned above. All birds were inoculated with 0.5 ml. of seventh-passage chicken embryo material except those challenged by the oral route, in which 1.0 ml. was used.

Instructor (Pate) and head (Delaplane), Department of Veterinary Bacteriology and Hygiene; and head (Boney), Dr. Boney Laboratories, College Station, Texas.

AGE SUSCEPTIBILITY AND INCUBATION

The turkeys thus far known to be involved in the Texas outbreaks have been, in most instances, mature breeding stock in the latter part of their laying season. In two flocks, however, the birds were 10 to 14 weeks of age. Recent experimental evidence indicates that birds of all ages are susceptible and it appears that the mortality is greatly increased in younger birds.[3]

Adequate information for determining the accurate incubation period in naturally infected birds has not been obtained. In the experimental birds, the incubation period in all instances, except the birds challenged orally, varied from three to twenty-one days. The intravenous route of challenge produced 100 per cent mortality in three to six days, whereas the intratracheal, intraperitoneal, and intra-air sac routes produced 2 deaths (40%) each in ten to twenty-one days. With birds given the virus orally, the incubation period was twenty-two days, at which time 1 bird died.

SYMPTOMS AND HISTORY

An important fact, associated with ornithosis of turkeys, is that in some instances symptoms are absent. When symptoms do occur they include droopiness, yellow to green droppings, and in a few instances coughing, rattling, or other signs of a respiratory involvement. It should be emphasized that the infected turkey can be apparently normal at antemortem inspection and still present typical lesions at autopsy.

The effect on egg production or fertility seems to vary, in some instances not being affected at all. When 218 eggs from one of the above infected flocks were incubated, the result was: 103 infertile eggs, 58 dead germs, 15 dead pipped embryos, and 40 living poults. However, these eggs were obtained late in the laying season. In contrast

to this, another of the infected flocks had higher production, fertility, and hatchability records than any previous flock on that particular farm.

The flock owner usually gives a history of losing 1 to 3 birds daily over a three- or four-week period and of having only a few or none visibly sick. The mortality in a flock usually varies from 0.1 to 3.0 per cent, but infection as shown by gross lesions can be as high as 50.0 per cent of the flock.

In practically all cases, the experimental birds were passing bright green droppings on the fifth to seventh day after exposure to the virus, and this persisted for about one week. When other symptoms did appear, they consisted of weakness and, in 1 case, râles. Invariably, when birds did show signs of sickness they would die within a few hours.

Gross Pathology

The most prominent lesions are those of a subacute or chronic inflammation of the air sacs and abdominal viscera. This inflammation may be of a purulent or of a fibrinous type, or a combination of the two. In severe cases, the thoracic and abdominal air sacs and the abdominal viscera are covered with a fibrinous membrane. Ordinarily, there is no fluid in the abdominal cavity of affected male birds, but in females there is nearly always a watery, brownish fluid present, probably due to the rupture of ova during the birds' illness. The virus is present in this fluid in considerable quantities and care must be taken to prevent contamination of the premises and personnel.

The spleen is usually a dark purple, but is rarely enlarged, as described previously in affected psittacine birds.[4] None of the spleens in experimental birds were enlarged, possibly due to the short time between exposure and autopsy, but the virus may be present in normal-sized as well as in enlarged spleens. The grayish cast often encountered is due to an inflammatory exudate which covers the serous surface of the organ.

A slightly enlarged liver, with a fibrinopurulent membrane covering its external surface, has been observed in a number of birds. The severity of this perihepatitis is probably related to the chronicity of the disease, since it has not yet been observed in experimental birds to the extent that it occurs in some field cases. Gray or green bands may discolor the surface of the liver.

The gall bladder may be greatly distended with bile and the intestine often contains bright green feces throughout its length. The serous surfaces of the cecums are often inflamed and congested in the chronic cases.

The heart is nearly always involved and includes a fibrinous inflammation of the muscle and pericardium. The extent of the lesions vary from only scattered petechial hemorrhages to severe adhesions between the musculature and pericardium. Often 1 to 20 ml. of purulent exudate will be present in the pericardial sac.

Lesions in the lungs are seen occasionally and consist of a diffuse type of pneumonia with various degrees of red hepatization. There also may be an excess of serum-like fluid surrounding the lungs. Pneumonia has been observed in field cases as well as in birds challenged intravenously and intratracheally.

Experimental birds show lesions practically the same as those described above. They were observed for thirty days, at which time those surviving were killed and examined. The severity of lesions present was in direct relation to the length of the postinoculation time. The gross pathology most resembled that occurring in field cases when the inoculation was by the intratracheal and oral routes.

Summary

1) Turkeys of all ages are susceptible to infection with the ornithosis virus but the mortality is greater in young birds.

2) The incubation period varies with the route of exposure and often there are few or no symptoms before death.

3) The symptoms are not specific but may include droopiness, yellow to green droppings and, in a few instances, coughing, rattling, or other signs of a lower respiratory involvement.

4) The lesions of ornithosis may be confused with those of other diseases characterized by a fibrinopurulent inflammation of the serous surfaces of the thoracic and abdominal viscera. Frequently, the only organs visibly affected are the spleen, liver, and kidney. These may be enlarged. Often the spleen is dark purple and the kidneys may be a light gray. The liver usually has gray or green bands discoloring its surface.

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Lead Poisoning in a Gorilla

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Chicago, Illinois

On May 29, 1954, a 9-year-old male gorilla, Irvin Young (fig. 1), showed symptoms of a developing neurological syndrome. He did not use his left arm but ate with the aid of his toes, or by bending over and picking up the food with his mouth. He had difficulty in getting on and off the shelf in his cage. His stool was hard and scanty. His hands were sweaty and felt slightly warm. The only therapy that day was milk of magnesia and more orange juice added to his diet.

The next day, when he used neither arm and favored the right leg, I was called and, on visual examination, confirmed most of the above symptoms. He was fairly alert but lethargic as compared to his normal active self, staying in one corner of his shelf most of the time. If he moved, he supported his weight on his elbow rather than on his knuckles. I then called two physicians* from the University of Chicago medical staff for consultation. However, examination of the gorilla was limited to observation through the bars of the cage, with temperature readings and blood specimens not available, so the first tentative diagnosis was peripheral neuritis. However, discussion of the case with the zoo director** revealed that on April 5, 1954, the animal had eaten some red lead paint from the bars of the cage, which was being repaired. He vomited a short time later,

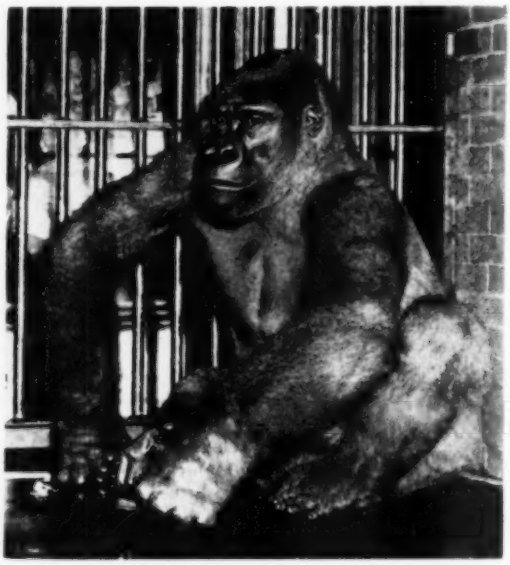

Fig. 1—Irvin Young, 9-year-old male gorilla at the Lincoln Park Zoo in Chicago, which suffered from lead poisoning. The picture shows him recovered.

some of the red paint being seen in the vomitus. Symptoms other than a minor intestinal upset were not observed and the incident was disregarded. There had been no further exposure to lead.

The consultants considered the lead ingestion of possible major importance, especially when urine collected on May 30 was positive for lead at the level of 0.290 mg. per liter of urine. A second specimen collected on June 4 contained 1.235 mg. of lead per liter of urine.

After May 30, the gorilla showed a slight but definite daily improvement. The vitamin B complex factors in his supplement feed were greatly increased and liver was given daily in the diet. In a week or ten days, he was grasping the food normally with both hands and moving about the cage rather freely. By June 13, he seemed entirely normal and no other symptoms have developed.

Comments.—Lead poisoning is not rare in man, although its frequency is decreasing. The effect of occupational exposure (painters, battery workers, typesetters, etc.) to repeated small quantities of lead over long periods is usually a peripheral neuritis, characterized most commonly by wristdrop. In children who eat lead paint from toys, cribs, and walls, the disease may be more acute and severe, presenting it-

Dr. Fisher is veterinarian for the Lincoln Park Zoo, Chicago, Ill.; and has a small animal practice in Berwyn, Ill.

*Dr. Paul Steiner, head of the Department of Pathology, and Dr. Theodore Rasmussen, head of the Department of Neurosurgery, University of Chicago Medical School, made the diagnosis and advised as to the treatment.

**Marlin Perkins, director of the Lincoln Park Zoo, Chicago, Ill.

self as an acute encephalopathy.[1,2] Paints to which children have access are now usually lead-free.

Lead poisoning has not been commonly recognized in zoo animals, but this possibility should be suspected in cases of obscure neurological disorders, especially in those animals that have had access to lead-containing paints. Since absorbed lead is eliminated slowly, the accumulated dosage sufficient to cause symptoms is small. Such dangerous amounts may be obtained by eating lead-containing chips, by licking or eating painted surfaces (especially if the food be acid), and in other ways. Species with great curiosity and those that use their fingers, such as the primates, would be expected to suffer most often.

The diagnosis is made by combinations of lead determinations in the urine, basophilic stippling of the red blood cells, lead lines in the gums and in the radiographs of long bones of young growing animals, and by the clinical neurological findings, all in the presence of a clinical history of exposure.

Most important in treatment is to stop immediately all exposure to lead. If the disease is mild, this, with supportive therapy, is usually sufficient, recovery occurring gradually as the lead is eliminated in the urine. In more severe cases, efforts can be made to hasten elimination and to prevent fixation in the skeleton by use of various new chemicals called chelating agents.[3,4] Compounds which hasten mobilization from the bones, of lead which has already been fixed, should be used with extreme caution.

The diagnosis of lead poisoning in this gorilla seems logical on the basis of a definite history of exposure, strongly suggestive symptoms, the urinary findings, and the clinical improvement which corresponded with the decline in urinary lead. Whether the "polio-like" disease mentioned by Hooton[5] and others, as afflicting gorillas, is also lead poisoning can not be determined without further evidence. Neither is it possible at this time to correlate the disease in this gorilla with that reported in "Bushman,"[6] although it is believed that the latter was different.

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First Reported Cases of Trombidiiasis in Horses in Yugoslavia

In Yugoslavia, there have been no reported cases of Trombidiiasis in horses. In 1933, Petrovic reported cases of trombidiiasis in sheep (in Macedonia), but until now there have been no reports of incidents of this disease in other animals. In a

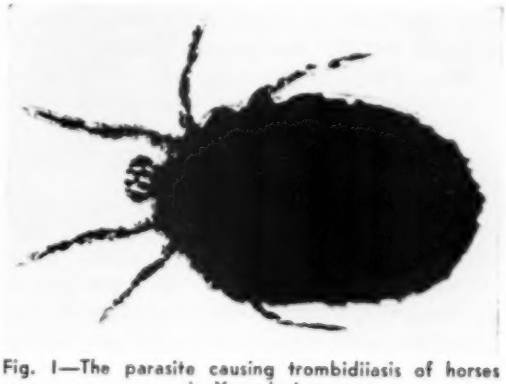

Fig. 1—The parasite causing trombidiiasis of horses in Yugoslavia.

recently published book,[1] the authors stated that these parasitic larva might be found in our ungulata.*

On separate occasions, 2 mares** brought to the clinic (on Oct. 15 and 25, 1953, re-

*Prof. Dr. J. Rukavina, chief of the Institute for Parasitology and Invading Disease, Veterinary Faculty Sarajevo, reports similar cases years ago in Lika, Croatia, but he had no opportunity to determine the kind of parasites.

**Numbers 55/53 and 103/53 of the protocol of clinic.

[1]Babic-Delak-Mikacic: Parasites and Parasitic Diseases of Horses. Zagreb, Hungary, 1953.

spectively) for other reasons were found to be suffering from skin disease.

At first, it appeared that the skin on the head was sprinkled with red-colored areas, but on closer examination, these red areas were found to be mosaic-like lesions consisting of very fine, grainlike, spherical bodies from the size of a lentil to a small bean. Between the nostrils and the upper lip, there was a red irregular line the shape and size of a finger. On the lower lip were irregularly dispersed red areas similar to those mentioned above. Oroventrally to the inner canthus of each eye was a red, ringlike structure with a clearly depicted outer line abounding with parasites and an inner area free of parasites but with normal or slightly broken hair.

In some places, the first sign of invasion by the larvae was some derangement of erected hair. On the root of the hair, single larvae resembling red grains were visible.

Itching was negligible and, in contrast to Marek's opinion, the skin affected by parasites was pigmented. It would seem by the way these efflorescences were expanding that there was some allergic condition because, in a few days, the infested areas were greater but in the center of each area the parasites were "cleaning off," perhaps due to greater resistance or immunity, so that annular or circular efflorescences appeared. In no case were there secondary efflorescences as mentioned by other authors. In both cases only the head was affected.

Microscopic examination revealed many mitelike parasites with three pairs of legs (fig. 1). It was established that these larvae were of the family Trombidiidae.—*L. Ozegovic, Docent Veterinarskog Fakulteta, Sarajevo, Yugoslavia.*

Chelation for Lead Poisoning in Man

Four cases of lead poisoning are described. Although each patient had been a painter for several years, in three, symptoms followed jobs of scraping and brushing paint from steel. The fourth patient had been burning paint. Each complained of abdominal pains and weakness, some of nausea and headaches. Each revealed tenderness and rigidity of the abdomen, a low hemoglobin level, and low red and white blood cell counts. One had a diminished and tingling sensation in all extremities and a typical "high-stepping gait," while another showed marked pallor, pyorrhea, and a definite lead line on the gums. Each was treated *per os* with disodium calcium ethelyne diamine tetra-acetate (versene), 2 Gm. per day in divided doses for seven days. This amino acid compound of the tetra acetic acid avoids the latter's dangerous characteristic of eliminating normal plasma electrolytes with the lead. Each patient reported improvement within a few days and, in a few weeks, all were free of symptoms and had returned to work.—*J.Am.M.A., July 3, 1954.*

Bovine Type of Tuberculosis in Man

As a sequel to an editorial in the April, 1954, JOURNAL, Dr. James H. Steele of the Public Health Service has furnished us with information on the bovine type of tuberculosis in the human species in the United States.

He finds only 6 positive cases reported since 1950. They included (1) a war bride who had spent many years in a European concentration camp; (2) a man who had lived for many years in Quebec; (3) a housewife in Chicago who had lived on an Iowa farm; (4) a Connecticut housewife with no known contact either with animals or raw milk; (5) an elderly woman in West Virginia who may have been infected through raw milk; and (6) a case in the State of Washington which is being investigated.

The morbidity and mortality data on tuberculosis for 1950 included 33,959 deaths as follows:

31,093 were described as respiratory disease;
1,094 as central nervous system disease;
875 as disseminated disease;
274 as genital urinary tract disease;
182 as vertebral column disease;
146 as disease of lymphatic system and other organs;
66 as disease of bones and joints;
229 as gastrointestinal.

While apparently none of these deaths were attributed to the bovine type of infection, some might surmise that the 2,866 nonpulmonary cases (about 9%) were of the bovine type, an opinion quite generally held at one time. However, nearly all such cases in this country have been demonstrated to be of the human type. Even in

countries where the bovine disease is still prevalent, only about 25 per cent of the extrapulmonary cases are of bovine origin.

In Alaska, probably the only area under the American flag where a high incidence of nonpulmonary tuberculosis occurs, surveys have not revealed any evidence of the bovine type of organism producing disease in man. The Alaska authorities state that tuberculosis is an exceedingly rare disease among their animals.

Dr. Steele states: "In conclusion I would like to point out that, in so far as I can determine, bovine-type tuberculosis is an exceedingly rare human disease in the United States. I think that more than 6 cases have occurred in the past five years but I am very doubtful if the number would exceed two figures. In 1953 there was one known human death from bovine type of tuberculosis. In discussing this with a medical colleague, he stressed the point that unless the case of bovine tuberculosis is in a child, one could not attribute it to a recent infection of animal origin since a person may have been exposed twenty or thirty years ago and the disease only became evident because of contributing factors, such as chronic disease of other infection. I think that this interpretation is important to bear in mind so we do not become unduly concerned over a case of bovine-type tuberculosis in aged human beings."

Equine Encephalomyelitis in Man Due to Vaccination

Fourteen cases of Venezuelan equine encephalomyelitis are reported following the inoculation in the United States of 327 persons with a formaldehyde-treated virus vaccine. The incubation stage, before the onset of clinical illness, was three to six days. The onset was invariably abrupt with fever, chills, severe headache, muscle pains, lethargy, and sometimes vomiting, diarrhea, visual blurring, and somnambulance. It appeared to be a self-limiting process, most cases recovering after a few days of hospitalization. Virus was recovered either from the blood or throat washings in 8 of the last 10 cases. None of the 14 persons were believed to have been exposed to the virus except by vaccination.—*J.Am.M.A., Aug. 21, 1954.*

Immunizing Against Teschen Disease

It is claimed that Teschen disease has been practically eradicated from Slovakia by vaccinating over 500,000 pigs with an adsorbed vaccine in the fall and winter of 1952. In the previous eight months, the disease had caused the loss of nearly 11,000 pigs.—*Vet. Bull., Aug., 1954.*

Rat Control and Trichinosis in Swine

In British Columbia in 1949, *Trichinella spiralis* were found in the diaphragms of 48 (10.1%) of 471 swine from eight garbage-feeding establishments. The rat population on these premises was heavy and trichinas were found in many of the rats. Later, when these establishments had adopted rigid rodent control programs, no trichinas were found in the diaphragms of 270 hogs examined. In a 1938 report on swine fed on garbage in the San Francisco area, the incidence of trichinosis had been reduced from 15 per cent to 4.04 per cent following rodent control.—*Canad. J. Comp. Med., Aug., 1954.*

Adrenal Function and Milk Fever

In studying the leukocytes of 10 cows with parturient paresis, it was concluded that the adrenal cortex is not involved in the physiological alterations which cause the syndrome but, rather, the cortex responds to the stress conditions produced. The leukocyte reaction is similar to that obtained by an injection of ACTH, indicating that the stress of the disease causes an increased secretion from the adrenal cortex.—*J. Dai. Sci., Aug., 1954.*

Rumen Reduces Sulfate to Sulfide.—When sodium sulfate was fed to sheep, it was reduced in the rumen to sulfide, as were sodium sulfite and thiosulfate. The sulfur element is eventually incorporated into the cystine and methionine of the milk proteins.—*Biochem. J., 56, 1954.*

Air Conditioning in Farrowing Houses.—When the temperature was kept at a constant 80 F., sows were less restless and laid on fewer pigs. A fan was used to keep the air circulating.—*Farm J., Oct., 1954.*

Isolation of *Pasteurella Pseudotuberculosis* from a California Turkey

WILLIAM J. MATHEY, Jr., V.M.D., Ph.D., and PHYLLIS J. SIDDLE, B.S.

Davis, California

AN 8-MONTH-OLD tom turkey, which had died about four hours previously, was brought to the authors from a ranch in Solano County, California. The owner stated that the bird had been droopy for several days but had continued to eat until shortly before death. According to the owner, there had been no vaccinations of any type done on the ranch. The birds were kept on a dirt floor.

AUTOPSY FINDINGS

On autopsy, the bird was found to be in fair flesh. It had a breast blister, and had about a quart of clear ascitic fluid in the abdominal cavity. The liver was small and pale and, on section, was seen to be very fibrous. The heart muscle was pale. The spleen was dark but not enlarged.

BACTERIOLOGICAL STUDIES

Cultures were made from the heart and liver on tryptose blood-agar plates. After forty-eight hours, grayish colonies about 1 to 3 mm. in diameter were found on these plates. The blood agar became clear and brown. The colonies were butyrous. A suspension was readily made by stirring a loopful of the organisms in a small amount of broth or solution. The organisms were mostly coccobacilli, with some longer rods and a few long filaments. The organism was gram-negative.

On inoculation of the organism into sugar solutions, the following were acidified in twenty-four hours: glucose, maltose, mannitol, levulose, rhamnose, xylose, arabinose, and trehalose. Salicin was acidified in forty-eight hours, and glycerol in seventy-two hours. There was no action on lactose, dulcitol, sorbitol, inulin, and inositol. Sucrose was acidified on first isolation, but not on subsequent re-isolation. Gelatin was not liquefied. Litmus milk was slightly alkaline after three days' incubation. SIM medium indicated a slight amount of H_2S after seventy-two hours' incubation. Indole tests were negative; Voges-Proskauer test was negative; methyl red test was positive on original isolation, and negative thereafter; catalase test was weakly positive; methylene blue was reduced in twenty-four hours; nitrates were reduced; ammonia was produced. The organism grew well on MacConkey's agar for two days and then died out. Growth in tryptose broth was moderate. The organism was motile at room temperature.

The above findings correspond with the description for *Pasteurella pseudotuberculosis* given by Breed *et al.*[1]

ANIMAL INOCULATIONS

Colonies of this organism were removed with a loop from a blood-agar plate and suspended in physiological saline solution to a density of about McFarland No. 4. This suspension was injected into 2 guinea pigs: 1 cc. intravenously into guinea pig 1 and 1 cc. intraperitoneally into guinea pig 2. The first one died in about eight hours. Autopsy revealed the following: hemorrhagic mesenteric lymph nodes, gelatinous material in the omentum, ecchymotic hemorrhages visible on the serosa of the stomach with corresponding ulcerations on the mucosal surface, a dark liver with a few small yellow spots, and grayish lungs. Cultures were made of the liver, heart, and lungs of this pig. The same organism was recovered.

The second guinea pig died after two days. On autopsy, the following were found: hemorrhages in the uterus, which was filled with a sanguineous fluid; yellow caseous material attached at the dorsal pole of the spleen; and grayish lungs. Cultures were made of the liver, lungs, and heart. The same organism was recovered.

A similar suspension of the organism was injected into 2 more guinea pigs, 1 cc. subcutaneously. Guinea pig 3 died in two days. The site of inoculation on the belly wall was hemorrhagic and swollen. The liver was filled with small yellowish white foci. The lungs were grayish. There were several milliliters of fluid in the pleural cavity. The spleen was not enlarged. The adrenals had pale spots on the surface. The lymph nodes were apparently normal.

The fourth guinea pig died in about five days. The site of inoculation was hemorrhagic with much edema over the belly wall. There was bloody fluid in the abdominal and thoracic cavities. The liver was full of yellowish white foci. The lungs were grayish.

Guinea pigs 5, 6, and 7 were inoculated with a similar suspension subcutaneously in an attempt to produce chronic lesions. Guinea pig 5 was given 0.5 cc.; guinea pig 6, 0.25 cc.; and guinea pig 7, 0.1 cc.

Pig 5 died in six days. Autopsy findings were as follows: The site of injection was swollen and reddened, with necrotic central portion; the liver contained many miliary foci; the lungs were consolidated; fluid was found in pleural and abdominal cavities, a blood clot in the thoracic cavity; the omentum contained many small foci; and the spleen was apparently normal.

Guinea pig 6 died in eight days. On autopsy,

From the School of Veterinary Medicine, University of California, Davis.

the following were seen: hemorrhage on the body wall; caseous lesion at the site of inoculation; discharge from mouth at time of death; fluid in thoracic cavity; nodules on heart; hemorrhage and consolidation of tip of anterior lobe of right lung; few nodules throughout the lungs; the liver contained many whitish yellow foci about pinhead size; the spleen was not enlarged but had a few petechial hemorrhages; some excess fluid was in the peritoneal cavity; the omentum had a few nodules; and the mesenteric lymph nodes were hemorrhagic and contained a few nodules.

Guinea pig 7 died in nine days. Autopsy findings were: caseated area at the site of inoculation; many caseous lesions in the liver and omentum; lungs pneumonic, with caseated foci; spleen, normal in size with a few petechiae.

Guinea pigs 8 and 9 were given 2 cc. each of a McFarland No. 4 suspension of the organism by stomach tube. These pigs were killed after one month and no lesions were found.

Two 6-week old poults were inoculated with a McFarland No. 4 suspension of the organism. Poult 1 was inoculated with 1 cc. intravenously. It died overnight. On autopsy, many petechiae were seen in the liver. No other lesions were visible. The original organism was recovered from cultures made from the liver, heart, and spleen.

Poult 2, inoculated intramuscularly with 1 cc. of the suspension, died in five days. The area of inoculation was yellowish and caseated. The liver was gravish yellow-brown with small foci, and was small and firm. The spleen was small and firm with no visible lesions. The kidneys were pale. Much mucoid material was present in the intestine. Cultures from this bird contained the original organism.

DISCUSSION

The finding of *Pasteurella pseudotuberculosis* in a turkey from Solano County in California serves to emphasize the warning of Blount[2] that the disease may be more widespread than is commonly thought. Rosenwald and Dickinson[3] found the disease in a number of flocks in Oregon, while Beaudette[4] found it in an infected blackbird. It is likely that many cases of the disease may be missed since, as Stafseth[5] points out, the symptoms and lesions resemble those of other diseases. The strain reported here seems highly toxic, as shown by the rapid deaths on intravenous inoculation. Armstrong[6] reports that he has found *P. pseudotuberculosis* in the Petaluma (Calif.) area on several occasions. In his opinion, the strains he found were not as toxic as the present one.

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Significance of Pasteurella Types

Pasteurella organisms undergo variation easily on artificial culture and change their characteristics remarkably. Any classification of the organism should take this into consideration. This research, started twenty years ago, with bacteriological and immunological studies of strains of Pasteurella from cattle, swine, sheep, rabbits, and fowl resulted in their being classified into 4 types—A, B, C, and D. Type A was isolated from birds with fowl cholera; types B from acute septicemias in cattle, swine, sheep, and rabbits; types C and D from a nonacute infectious pneumonia in various species of animals.

Bacterins and immune serums prepared from types A and B are effective against the specific disease in fowl and mammals whereas those from types C and D are not. Types C and D usually produce pneumonic lesions only when influenza, long distance transportation, or such factors as changes in temperature have weakened the animal's resistance. This condition does not become epizootic.—*Off. Internat. des Epizoot., 38*, May, 1952.

Preparing Built-up Hen House Litter.—The "building" of litter in a chicken house should be started during warm weather, long before the cold, damp weather sets in. After thoroughly cleaning and disinfecting the building, 3 or 4 inches of litter is placed on the floor and stirred frequently while it dries. New litter is then added about once a week until it is 8 to 12 inches deep. The stirring, sufficient to keep the litter dry, is repeated at intervals all winter. Crushed corncobs or wood shavings make excellent litter, since they do not pack.—*Hoard's Dairyman, Aug. 25, 1954.*

NUTRITION

Cornstalk Poisoning

Dr. A. A. Case, University of Missouri, reports the loss of 1 to 12 cattle on each of at least 25 farms in drought-stricken west central Missouri. The losses, apparently due to a variety of conditions including cornstalk poisoning, usually occurred about a week after the cattle were turned into the fields. The fields either were too poor to harvest because of drought or the corn had been picked by hand. Deaths occurred within a few hours regardless of the therapy. New cases developed up to seventy-two hours after removal from the fields. Two constant findings were: a high nitrate level in the cornstalk, especially toward the root, and much corn smut (*Ustilago zeal*). Some affected animals were depressed, others would furiously charge anything that moved. The latter usually showed shortness of breath, a pounding heart, bulged eyes, pale or blue-gray mucous membranes, and temperatures normal or even subnormal. In one field where bull nettle or nightshade and ground cherries had been eaten, animals would suddenly fall dead, 9 of 30 dying in twelve hours on the sixth day in that field.

The more common condition was neither green corn engorgement nor uncomplicated nitrate poisoning. These corn plants could be safely fed if made into silage and probably also if cut and shocked until dry.

Sheep are seldom poisoned in these fields, possibly because they eat the leaves instead of the stalks.—*Sheep Breeder, Oct., 1954.*

[Cornstalk poisoning of cattle was common prior to 1940, at least in the western cornbelt, especially in dry years when immature stalks were frosted. After cornhusking machines came into general use, it seldom if ever occurred, probably because the stalks had been broken. This could explain why, in repeated experiments with stalks taken from such fields, no poisoning could be produced regardless of the nitrate content.

Nor could poisoning be produced by the feeding of huge quantities of the black corn smut which was common in some years. The disease years ago was commonly diagnosed as "hemorrhagic septicemia" because of the many petechiae found in the areolar tissues, in the thymus gland, and on the heart. The most significant lesions, however, were a blue cyanotic liver and an amber-colored edema around the gall bladder. A dextrose solution given intravenously would usually revive these animals, even those in a coma, but they would invariably relapse after a few hours and die.—ED.]

Excessive Vitamin A Poisoning

A 21-year-old woman had taken 500,000 units of vitamin A per day for over ten years for a skin disorder. In the past nine years, she had been a patient in six hospitals before her condition was correctly diagnosed. Initially, she had headaches, double vision, and nausea and the tentative diagnosis was brain tumor. Eventually she developed pigmentation of the skin, thinning hair, scaling of the palms and soles, enlargement of the liver and spleen, anemia, muscular pains, and arthritis with a calcification in the cartilages which was not similar to infectious arthritis. Two months after the vitamin A was discontinued, her pains had gone so that no further sedation was needed, all evidence of the poisoning vanished, and she gained in weight. Previous studies have indicated that vitamin A overdosages may produce intracranial disturbances, associated with increased fluid pressure, and accelerated periosteal bone formation. At the time of diagnosis the patient's vitamin A blood level was 2,000 mg./100 cc., the highest ever reported in man.—*Nutr. Rev., Sept., 1954.*

Feeding Salt with Proteins to Swine

Adding salt to cottonseed meal to control the consumption when fed to cattle and sheep on the range has long been successfully practiced. In a recent experiment at Purdue University, salt was likewise added to soybean meal, self-fed to swine from weaning time to a weight of 200 lb. Five lots of pigs on good alfalfa, Ladino pasture, shelled corn, and a simple mineral mixture, were self-fed the meal with salt added at

levels of 2 to 10 per cent. Gains were not affected but the cost of feed per hundredweight and the amount of meal consumed was reduced with each increase in salt. Those fed the 10 per cent salt level ate less than one-third as much soybean oil meal as did those at the no-salt level.—*Farm J., Oct., 1954.*

[An unlimited supply of fresh drinking water must be available, especially for swine because of their susceptibility to salt poisoning.—ED.].

Sucrose Inadequate for Newborn Pig

The form of sugar used in synthetic milk rations for baby pigs proved, at the University of Illinois, to be a prime factor in determining the adequacy of the ration. Pigs which had nursed their dams one day gained well and had little diarrhea when glucose was the carbohydrate. They gained less well and had an intermittent, moderate diarrhea when invert sugar was used. They lost weight, developed a severe diarrhea, and most of them died when fructose or sucrose was used, the reaction to sucrose being the most severe.—*Science, Aug. 27, 1954.*

Administering Vitamin K to Dogs

When natural vitamin K_1 was given intravenously to dogs, 0.5 mg. per kilogram of body weight daily maintained the blood prothrombin at a normal level. The same effect was produced when 4.5 mg. of water-soluble vitamin K (menadione bisulfite) per kilogram was given orally. However, in the absence of bile, even relatively large doses were ineffective. Thus, physiological disturbances such as bile deficiency may be responsible for vitamin K deficiency in dogs on a normal diet.—*Am. J. Physiol., 176, 1954.*

Hemorrhagic Syndrome and Vitamin K

Several recent studies indicate that the blood-clotting time of baby chicks which were raised for four weeks or longer on a wire screen floor and on a ration of corn and soybean oil meal was considerably greater than normal. In one experiment, the chicks showed subcutaneous and intramuscular hemorrhages and a clotting time of 9.8 minutes. When vitamin K (menadione bisulfite) was added to the ration the clotting time was reduced to 1.9 minutes.

Clotting was also retarded by the use of certain drugs, including some arsonic acids, sulfonamides and, in one case, terramycin® but a therapeutic dose of vitamin K restored it to normal. The deficiency could also be corrected by feeding dehydrated alfalfa meal or feces, either fresh or dry, the latter fact accounting for the deficiency effect of the screen floors. The simultaneous use of the low vitamin K ration and any of these drugs undoubtedly aggravates the condition. Vitamin K is now being added to some poultry rations.—*Nutr. Rev., Sept., 1954.*

Feeding Stilbestrol to Heifers

When three lots of 8, 640-lb. heifers were compared at Iowa State College, those fed 12 mg. of diethylstilbestrol daily gained 2.34 lb. per day at a cost of 19.6 cents per lb.; those fed 6 mg. gained 2.23 lb. at a similar cost; while controls gained 2.03 lb. at a cost of 21.7 cents. The hormone-fed heifers exhibited no excessive riding or restlessness, no abnormalities of the reproductive system or mammary glands, and no difference in dressing percentages and carcass grades, yet they returned $7 more per head over feed costs.—*AFMA Nutr. Abstr., Sept., 1954.*

Feeding diethylstilbestrol to 825-lb. steers at Iowa State College, at the rate of 5 mg., 10 mg., or 20 mg. per day per steer for 120 days, produced no bad effects such as riding and restlessness, which could be attributed to the stilbestrol. The rate of gain was approximately 25 per cent faster at the higher levels than in the controls.—*Aberdeen Angus J., Sept. 1954.*

Whale Meat for Animal Food.—With the disappearance of horse meat, whale meat has been fed successfully in a test ration to mink. Annually, 500 to 600 whales averaging over 120,000 lb. are processed. A single, back loin weighs about 7,000 lb.—*Nat. Fur News, Aug., 1954.*

The energy value of 1 lb. of 4 per cent goat milk is about 342 calories, practically the same as cow's milk.—*Dai. Goat J., Sept., 1954.*

EDITORIAL

A Brief History of AVMA Publications

The announcement, elsewhere in this issue, of the addition to the staff of the JOURNAL of the American Veterinary Medical Association of an editor for small animal medicine launches what might be called a new era, the sixth, in the history of the Association's publications.

The *first era*, a five-year period, commenced in January, 1877, with the first issue of *The American Veterinary Review*, the first official journal of the United States Veterinary Medical Association (which in 1898 became the American Veterinary Medical Association). In 1882, the *Review* was taken over by Alexander F. Liautard, the editor, as a private venture. Most of its relatively little competition came from the *Journal of Comparative Medicine and Veterinary Archives* (1880 to 1903), the annual reports of the federal and some state governments, and reports from a few veterinary schools.

The *second era*, which started ten years after termination of the first, lasted for twenty-three years. It was the period in which the Association's only publication was a report of the proceedings of its annual convention. The first issue, of which 500 copies were printed, was the "*Proceedings of the U. S. Veterinary Medical Association, 1891-1892.*" The title was changed to *Proceedings of the American Veterinary Medical Association* when the organization likewise changed its name in 1898. The last *Proceedings* in this series was the 1913-1914 issue, there being no 1914 meeting to report due to the profession's preoccupation with the epizootic of foot-and-mouth disease.

The *third era*, the twenty-five years in which the AVMA published a single journal (a monthly), was inaugurated in 1915 with the acquisition of the *American Veterinary Review* and the change of its name to the JOURNAL of the AMERICAN VETERINARY MEDICAL ASSOCIATION. For thirty-five years, after 1915, the Association's entire proceedings were published in installments as part of the JOURNAL.

During this twenty-five year era, veterinary medicine scarcely held its own quantitatively. The records show 10,485 veterinarians in the U. S. and Canada in 1915 and 11,729 in 1940, the chief reasons for this being the long postwar agricultural depression and the passing of the draft horse.

The production of the JOURNAL, as measured in pages, paralleled the profession's population stasis; 1,443 pages in 1920 and 1,568 pages in 1937-1938—the last 12 issues before the page size and word capacity was increased by about 59 per cent. However, during this era several new professional publications were established including *Veterinary Medicine* which, from 1906 to 1921, was called the *American Journal of Veterinary Medicine;* the quarterly *Cornell Veterinarian* (1911); the *North American Veterinarian* (1920); as well as an extensive annual report of the U. S. Livestock Sanitary Association (1897). In addition, about eight veterinary supply house magazines, with a wide distribution, were introduced, chiefly during the 1920's, as were a few state association publications and one veterinary student quarterly.

Meanwhile, the subject material was changing. Whereas prior to the first World War the equine species had received most of the profession's attention, a survey in 1930[1] revealed that practitioners estimated the percentage of their time spent per species as: cattle 38.8; horses 19.7; swine 16.4; sheep 2.5; small animals 19.6; and poultry 2.8. The number doing small animal practice exclusively was not indicated in that report but by 1940 it was 5.0 per cent of the veterinary population and by 1953, 10.2 per cent.[2]

The *fourth era*, a ten-year period, was initiated with the first issue in October, 1940, of the *American Journal of Veterinary Research*.[3] This publication, issued quarterly, was established to relieve the JOURNAL of the increasing number of highly technical manuscripts which were being submitted. In 1939 the volume of the JOURNAL, although the pages were of the larger

size, was still 1,462 printed pages. In 1941, the first full year with the two journals, the total was 1,520 pages, 1,062 in the JOURNAL and 458 in the *Research Journal*.

During the 1940 decade, when the number of veterinary schools increased by 58 per cent and the enrollment practically doubled, the profession's population increased from 11,729 to 14,089. However, chiefly because of shortages resulting from the war conditions, the Association's publications did not parallel this growth, the page total in 1949 being only 1,366 for the two Journals.

The *fifth era* commenced in 1950 with the reestablishment of an annual "Proceedings Book" giving the AVMA three publications, a monthly, a quarterly, and an annual. This venture again reduced pressure on the JOURNAL by reserving it for the publication of current, not highly technical articles as well as news, abstracts, and reviews. With the retarding influences of the second World War receding, the volume of material released in these publications spurted. The total page volume of the three for 1950 was 1,887; for 1952, 2,116; and for 1953, 2,294 — a 57 per cent increase in the five years since 1949 but only 50 per cent greater than in 1940. By comparison, the veterinary population increase in the last five years is 14 per cent to about 16,500 in 1954, but since 1940 it is 40 per cent.

During this decade several more state associations and several student publications were launched. These, with pamphlets published by other groups, brings the number of periodicals for veterinarians published in the United States to more than 40.

In 1953, about 61 per cent of the JOURNAL space was taken by manuscripts and case reports, 22 per cent by news, 14 per cent by abstracts and reviews, and 3 per cent by editorials, about the same as in 1941 and 1948. The manuscripts and case reports pertained to the various animal species in the following percentages: bovine, 29; canine, 22; porcine, 8; ovine, 7; avian, 5; equine, 4; and feline, 3; with general articles, 18 per cent.

Thus, 44 per cent of the titles dealt with problems of food-producing mammals, 25 per cent with small animal pets.

This dawning *sixth era* in the Association's publication history which, because of Dr. Riser's qualifications should greatly improve the JOURNAL'S value to a large segment of the profession, is long overdue. Not only has the number of veterinarians doing small animal practice exclusively multiplied many times in recent decades, about tripling since 1940,[2] but their specialization has progressed until their problems and methods are often quite different from those of the large animal practitioner, probably being but little more like the problems of the latter group than they are like those encountered in human medicine.

The JOURNAL welcomes Dr. Riser to its editorial staff and is certain that its many readers will also.

References

[1]Report of Committee on Education, J.A.V.M.A., Oct., 1930: 494-499.

[2]Activities of U. S. Veterinarians in 1954 (editorial), J.A.V.M.A., Aug., 1954: 160.

[3]The Research Council — Our Strong Silent Partner (editorial), J.A.V.M.A., Feb., 1953: 129.

Dr. Wayne H. Riser Appointed to Editorial Staff

The JOURNAL is pleased to announce the appointment of Dr. Wayne H. Riser as editor for Small Animal Medicine, effective with this issue. Dr. Riser will continue in his small animal practice and other activities, devoting only part of his time to editing and supervising all small animal features in the JOURNAL of the American Veterinary Medical Association.

Born at Earlham, Iowa, Aug. 29, 1909,

Dr. Wayne H. Riser

Dr. Riser graduated from high school there, then received his D.V.M. degree at Iowa State College in 1932. He completed work for his master of science degree, in veterinary pathology, at the same school in 1945, his thesis being "Panleukopenia in the Cat."

He engaged in general practice at Glenwood in southwestern Iowa from 1932 to 1937, then moved to Des Moines where he established a small animal practice. During this time he attained a reputation as a successful practitioner, an able contributor to veterinary programs, and a leader in progressive professional activities.

In 1946, Dr. Riser moved to Evanston, Ill., where he assisted Dr. J. V. Lacroix in publishing the text, "Small Animal Medicine," and also assisted in editing the *North American Veterinarian*. In 1949, he returned to private practice, locating in Skokie, Ill., where his staff now includes four veterinarians.

Long active in promoting veterinary organizational activities, he has served as secretary of almost every association of which he has been a member. This includes holding the secretaryship of the Ak-Sar-Ben V.M.A. for two years, of the Central Iowa V.M.A. for several years, and of the Midwest Small Animal Association for ten years. At present he is secretary of the American Animal Hospital Association, having served in that capacity for the past seven years; he has been secretary of the Chicago V.M.A. for the past three years.

For the past four years Dr. Riser has been associated with the Department of Pathology, School of Medicine, Northwestern University, as a lecturer, participating in symposiums there one half day each week. He is also a visiting lecturer at the School of Veterinary Medicine, University of Illinois, and serves as a member of the advisory board for that school. He is a Fellow of the American College of Veterinary Pathologists and a member of their executive council. He is also a member of Phi Zeta.

Dr. Riser has been a contributing author to the texts "Canine Medicine" and "Canine Surgery." He produced, edited, and published "Planning Your Animal Hospital." He is also the author of articles on infectious canine hepatitis, canine paralysis due to protrusion of intervertebral discs, and many others.

He and his wife, the former Beth McGauly, reside in Skokie.

Acknowledgments for Television Demonstrations at Seattle Meeting

In illustrating some of the closed circuit television demonstrations which were staged at the Seattle meeting (*see* the JOURNAL, Nov.,1954:362-363), captions only were used for the pictures; there was no comment about the outstanding contributions which these demonstrations made to the scientific programs of the Sections before which they were presented.

It is desired at this time to make acknowledgment of the sponsorship which made possible the televised portions of the programs, namely, Allied Laboratories, Inc., in cooperation with Radio Corporation of America; their generous support of this educational work is greatly appreciated by the Association.

Much credit is also due those whose "backstage" work assured the smooth functioning and excellence of the television demonstrations, including Dr. R. H. Fuller, hardworking television chairman of the Local Committee; Dr. L. E. Fisher, able director of the demonstrations; Mr. Walter Lawrence, peerless technical director from R.C.A., and Mr. John Jewett, capable coordinator from Pitman-Moore Company.

Appreciation is also expressed for the fine work of the many veterinarians who presented demonstrations on the television programs.

Beef Cattle Production.—In the first eight months of 1954, 12 million cattle were slaughtered under federal inspection, 10 per cent more than in the same period of 1953. Of this number, 43.5 per cent were cows and heifers compared to 36.8 per cent in 1953, indicating a tendency to reduce female cattle population.—*The Cattleman, Oct., 1954.*

CURRENT LITERATURE

ABSTRACTS

Calf Diarrhea

In 18 calves with diarrhea, it was demonstrated that there was a decrease in the serum bicarbonate levels with a lowering of the serum pH. Variations from normal in the levels of serum sodium, potassium, chloride, and calcium were noted. In several cases, low blood glucose values were a prominent feature. Some of the cases were treated successfully with intraperitoneal injections of a balanced electrolyte solution.—[*B. J. McSherry and I. Grinyer: Disturbances in Acid Base Balance and Electrolyte in Calf Diarrhea and Their Treatment. Am. J. Vet. Res., 15, (Oct., 1954): 535-541.*]

Herbicides Hazard to Livestock

The acute oral $l.d._{50}$ values for 2,4-D and 2,4,5-T, as well as their various derivatives commonly used as herbicides, fall in the range of 300 to 1,000 mg. per kilogram of body weight for mice, rats, guinea pigs, rabbits, and cattle. Dogs are generally more susceptible and chicks are more tolerant of this type of material.

The acute oral $l.d._{50}$ values for commercial formulations of 2,4-D and 2,4,5-T that were used in these experiments were proportional to their content of active ingredient. The "inert ingredients" do not appear to contribute materially to the oral toxicity of the formulations. MCP (2-methyl-4-chlorophenoxyacetic acid) and silvex (2-(2,4,5-trichlorophenoxy) propionic acid) and their herbicidal derivatives appear to be slightly less toxic than the corresponding 2,4-D and 2,4,5-T materials.

The hazard to livestock and wildlife associated with the use, as recommended, of herbicides containing 2,4-D, 2,4,5-T, MCP, and silvex is negligible. Toxic amounts of these materials can be obtained if animals have access to spray tanks or other containers. [*V. K. Rowe and T. A. Hymas: Summary of Toxicological Information on 2,4-D and 2,4,5-T Type Herbicides and an Evaluation of the Hazards to Livestock Associated with Their Use. Am. J. Vet., Res., 15, (Oct., 1954): 622-629.*]

Virus Diarrhea in Cattle

From 2 cows which showed signs of illness similar to those described for virus diarrhea by Olafson and co-workers in 1946, infective agents which were similar antigenically were transferred to calves. In inoculated calves, the course of illness was diphasic, with an initial increase in temperature and a leukopenia two to four days after inoculation, followed by a receding temperature for two or three days and development of a second temperature elevation higher than the first. A diarrhea occurred in about half the calves and ulceration of the oral mucosae rarely occurred in inoculated calves. It would appear that the ulcerations and profuse diarrhea described for natural cases might be a complication and the result of one or more agents acting either secondarily or in combination with the diarrhea virus.

The greatest concentration of virus in the blood and in the spleen was found in the interphase, or four days after inoculation. Smaller amounts of virus were found during the periods of elevated temperatures and none ten days after inoculation, when the fever had subsided. Isolations of virus from field cases, therefore, should be attempted before the end of the second phase.

Transfer of virus to rabbits was accomplished. After serial passages in rabbits, the virus became modified. Inoculation of susceptible calves in the seventy-fifth transfer produced a slight decrease in leukocytes and a temperature elevation that lasted for one day only. This modified virus immunized against fully virulent virus.—[*James A. Baker, Charles J. York, James H. Gillespie, and Grayson B. Mitchell: Virus Diarrhea in Cattle. Am. J. Vet. Res., 15, (Oct., 1954): 525-531.*]

Crystallization Patterns in Bovine Cervical and Vaginal Smears

Microscopic examinations of the occurrence or absence of crystallization patterns in dried unstained smears of cervical mucus of 168 slaughtered and 20 living cows were compared with postmortem findings, physical examinations, and histories. The presence of fernlike arborizations was classed as a negative reaction. The problem of halogen contamination producing false negative reactions was discussed. Instrumentation and techniques of collecting samples were described.

In cervical mucus, the crystal patterns were seen during three of the four phases of the estrous cycle, and in cases of cystic ovaries. The arborizations were absent during the lutein phase of the cycle and in cases of pregnancy and persistent corpora lutea. Vaginal smears failed to correlate well with cervical smears, ovarian conditions, or pregnancy.

The crystallization phenomenon is a good means of estimating ovarian activity in cattle, and could be used as a tentative diagnosis of early pregnancy. However, since the crystallizations are related to the progesterone activity of the gonads rather than to the presence or absence of a fetus, the test is subject to too great sources of error for routine

use.—[*J. F. Bone: Crystallization Patterns in Cervical and Vaginal Mucus Smears as Related to Bovine Ovarian Activity and Pregnancy. Am. J. Vet. Res., 15, (Oct., 1954):* 542-547.]

Morphology of Vibrio Fetus

This work illustrates the variations in the morphology of *Vibrio fetus* by means of electron microscopy. Cultures were transferred at three-day intervals on tryptose agar slants and were incubated at 37 C. under 10 to 20 per cent carbon dioxide. On initial isolation, the organisms were predominantly "comma" and "S" forms, with homogeneous cytoplasm. On transfer, the cytoplasm became granular in appearance, and long filamentous forms were observed. The comma forms had one polar flagellum, whereas many of the forms had a single flagellum at each end. Prolonged incubation and transfer to dry slants produced a coccoid form with a single flagellum. This form autoagglutinated.—[*Harry E. Rhoades: The Illustration of the Morphology of Vibrio Fetus by Electron Microscopy. Am. J. Vet. Res., 15, (Oct., 1954):* 630-633.]

Experimental Vibrio Fetus Infection in Guinea Pigs

The majority of 31 strains of *Vibrio fetus* or *V. fetus*-like microorganisms produced abortion in pregnant guinea pigs following intraperitoneal inoculation. The vibrios were isolated from the genital tract or fetal materials at the time of autopsy. Residence in the host for as long as sixteen days was observed. The gross pathological alterations seen in the infected animals is discussed. Three strains, following guinea pig passage, proved to be more suitable as antigens for serum-agglutination test than were cells which were not subjected to the passage procedure. The evidence may indicate either that variant types are being eliminated or that antigenic variants are produced or allowed to multiply during parenteral residence in the guinea pig.—[*E. V. Morse and M. Ristic: Experimental Vibrio Fetus Infection in Guinea Pigs. III. Pathogenicity Studies and Effect of Guinea Pig Passage upon Agglutinogens. Am. J. Vet. Res., 15, (Oct., 1954):* 599-603.]

Neoascaris Vitulorum in Calves

Twenty calves, 1 to 13 days old, representing three breeds were each fed a single dose of 5,000 infective Neoascaris ova with "negative" results. No eggs of the ascarid were found in the feces of these animals up to 120 days. Twenty-five cases of neoascariasis among cattle, carabao (*Bubalus bubalis* Linn.), and Indian buffalo (Bubalus sp.) calves, discovered within fourteen to thirty days after birth, are presented. The early appearance of eggs or of ovigerous worms in these calves is attributed to prenatal infection which is believed to be the usual, but not the only, mode of transmission in *Neoascaris vitulorum*. The mechanism of prenatal infection as well as the migratory behavior of the larvae of this ascarid in its host are discussed.—[*P. G. Refuerzo and F. S. Albis-Jimenez: Studies on Neoascaris Vitulorum. III. Further Observations on Inoculation of Calves with Notes on Prenatal Infection. Am. J. Vet. Res., 15, (Oct., 1954):* 532-534.]

Corynebacterium Pyogenes—A Study

After adaptation to unenriched medium, *Corynebacterium pyogenes* cultures may be expected to retain their typical effect on litmus milk but lose their ability to liquefy Loeffler's medium and, to some extent, their hemolytic properties and ability to liquefy gelatin. Such adaptation enhances their carbohydrate fermentation properties and, of 57 strains, 50 or more produced acid from aesculin, dextrin, dextrose, galactose, lactose, levulose, maltose, salicin, starch, sucrose, and trehalose; and at least half fermented arabinose, glycerol, mannitol, raffinose, sorbitol, and xylose. Dulcitol alone was not broken down by any of the strains. Cross agglutination and agglutinin-absorption carried out with antiserums prepared against the somatic component of ten strains indicated a consistent relationship within the species. Such antiserums employed against other of the 57 strains also indicated relationship. Cross agglutination employing ten antiserums prepared against the capsular fraction indicated an even closer relationship between strains.—[*J. F. Ryff and Jo Browne: Corynebacterium Pyogenes—A Cultural and Serological Study. Am. J. Vet. Res., 15, (Oct., 1954):* 617-621.]

Microscopic Anatomy of the Digestive Tract of the Pig

This study details the histological structure of the digestive tract of the domestic pig from the lips to the anus, with the exception of the teeth, pancreatic gland, and liver. There are 42 photomicrographs and 44 references.—[*Margaret W. Sloss: The Microscopic Anatomy of the Digestive Tract of Sus Scrofa Domestica. Am. J. Vet. Res., 15, (Oct., 1954):* 578-593.]

Clostridium Perfringens Type D Vaccines in Sheep

Vaccination of sheep against enterotoxemia with alum-precipitated formolized vaccines has consistently produced local reactions resulting in downgrading at market. In 6- to 8-month-old sheep, injected subcutaneously with either alum-precipitated *Clostridium perfringens* type D vaccine or vaccine without alum (anaculture), the presence of alum increased severity and persistence of local reactions during a 23-day postvaccination observation period. In testing effects of components or combinations of components of the vaccine, alum alone produced no reactions and anaculture only a minimal response, but alum in combination with toxoid or washed cells produced a reaction equal to that of the alum-precipitated vaccine. As deter-

mined by antitoxin titers of individual sheep serums, no difference in intensity or duration of immune response was observed in groups of sheep inoculated with alum-precipitated vaccine or vaccine without alum.—[*R. C. Percival, R. L. Burkhart, M. S. Cooper, and F. V. Martini: Vaccination of Sheep with Clostridium Perfringens Type D Vaccines. Am. J. Vet. Res., 15, (Oct., 1954): 574-577.*]

Blood Serum Levels of Streptomycin in Chickens

A simple dilution method has been used to determine the concentration of streptomycin in the blood serum of chickens injected intramuscularly with 25,000, 50,000, 100,000, and 200,000 units of streptomycin per bird. The blood levels obtained in different chickens were uniform for the same dosages and for corresponding assay periods. Moreover, within the range of body weights of 0.33 to 2.0 kg., chickens receiving the same dosage of streptomycin (expressed as units per bird) gave approximately the same serum-level response, although these doses might differ sixfold if expressed as units per kilogram of body weight. In contrast to penicillin, streptomycin is absorbed slower but retained longer. Chickens require about an eightfold dosage (units/kg./wt.) to attain blood concentrations equivalent to those of other species.—[*S. Bornstein and Y. Samberg: The Therapeutic Effect of Streptomycin on Infectious Coryza of Chickens Caused by Hemophilus Gallinarum. I. Blood Serum Levels of Streptomycin in Chickens. Am. J. Vet. Res., 15, (Oct., 1954): 612-616.*]

Streptomycin for Infectious Coryza of Chickens

Simple solid and liquid artificial mediums for the culture of *Hemophilus gallinarum* are presented, as well as a convenient method for its isolation from infected chickens, after first reviewing the pertinent literature. The inoculation of 7-day-old embryos via their yolk sacs results in even better growth and longer viability of this organism in the embryonic fluids than with the above mediums. It is rather inactive biochemically, and ferments consistently only glucose. This bacillus is involved in the etiology of avian infectious coryza in Israel.—[*S. Bornstein and Y. Samberg: The Therapeutic Effect of Streptomycin on Infectious Coryza of Chickens Caused by Hemophilus Gallinarum. II. Isolation and Culture of H. Gallinarum, and Some of Its Biochemical Reactions. Am. J. Vet. Res., 15, (Oct., 1954): 612-616.*]

Outbreak of Histoplasmosis in Man and Animals

A description of an outbreak of histoplasmosis among human beings and animals is presented. A total of 12 animals were studied, including 5 dogs, 4 cats, and 3 chickens. Their clinical symptoms, necropsy, and cultural findings, histoplasmin skin test results, and serological test results are presented. In the 12 animals studied, *Histoplasma capsulatum* was isolated from 5 dogs and 1 cat. The fungus was not isolated from the 3 chickens, but 2 were histoplasmin reactors. A total of 161 animals within a 2-mile radius of the involved farm were skin-tested with histoplasmin and 9 (6%) were found positive.—[*R. W. Menges, M. L. Furcolow, and R. T. Habermann: An Outbreak of Histoplasmosis Involving Animals and Man. Am. J. Vet. Res., 15, (Oct., 1954): 520-524.*]

FOREIGN ABSTRACTS

Invagination of the Stomach of the Dog

Two dogs with invagination of the stomach into the esophagus are described. One, a 25-day-old puppy, died four hours after the onset of severe hematemesis. Necropsy disclosed displacement of the stomach into the esophagus up to the anterior portion of the thorax. A week later, a litter mate of the first dog was presented with similar symptoms. Attempts to pass a sound disclosed blockage of the esophagus. Roentgenographs revealed a mass in the thorax. Laparotomy revealed invagination of most of the stomach into the esophagus. It was replaced and held in position by suturing to the abdominal wall. The animal appeared to be normal when examined fifteen months later.—[*Gunnar Tufvesson and Per Viriden: Surgical Treatment of a Case of Invaginatio Gastro-esophagea in the Dog. Nord. Vet.-med., 5, (June, 1953): 435-442.*]—A.G.K.

Contagious Pneumonia of Goats

Among 2,061 goats sent to Japan from the United States during 1947-1949, cases of contagious pneumonia were found. Afterward, the disease diffused all over the country, as was noticed when indigenous goats were killed. The infection was particularly serious in several livestock-breeding stations which kept large herds of animals.

The Experiment Station for Animal Hygiene of the Ministry of Agriculture and Forestry and the Institute of Kitasato cooperated in the etiological research of the disease, and succeeded in the isolation of the causal agent from the goats seriously infected.

The agent is a virus, 0.207 to 0.515 μ, which is filterable through Berkefeld V and N filters. It can be found in smeared specimens from lungs of infected goats.

The disease is transmissible to cattle, horses, sheep, dogs, cats, rabbits, guinea pigs, pigs, and mice, and the returning test to goats is also positive.

From the morphological observations of the agent and the histopathological studies of lesions, it can be considered that the disease is caused by one of the psittacosis-lymphogranuloma group.—[*K. Saito: Contagious Pneumonia of Goats. Bu-*

reau of Anim. Indust., Tokyo, Japan; from English summary in Bull. Off. internat. Epizoot., 22, (1954): 676-685.]—J.P.S.

Toxoplasmosis Cuniculi in Denmark

In Denmark, toxoplasmosis has been found in foxes, hares, dogs, and in a kangaroo in a zoo. This report described the first case seen in rabbits. Of interest was the involvement of the mesenteric nodes, indicating an alimentary origin. It is possible that toxoplasmosis of rabbits may be of public health significance.—[*U. Biering-Sorensen: Et tilfaelde af Toxoplasmosis cuniculi i Danmark (A Case of Toxoplasmosis Cuniculi in Denmark). Nord. Vet.-med., 5, (June, 1953):417-426.*]—A.G.K.

Spread and Prophylaxis of Rabies

The northern parts of Europe have not been free from rabies since World War I. Rigid police measures brought it under control in Germany until World War II, when it again became prevalent; at the present time, there is an extensive epizootic of rabies in Germany. Palloske observed an outbreak in Poland and West Prussia in 1939, in which wild foxes were shown to be infected. This is probably one of the sources of the present epizootic.

Diagnosis is assisted by the great excitability of affected animals. Affected cattle, in the presence of strange dogs, will develop typical nervous signs of rabies. The greatly modified course of infection and frequent absence of Negri bodies in wild animals suggests that there may be modifications of rabies virus or even a multiplicity of viruses.

Vaccination of dogs in Japan, Austria, Hungary, and the United States has reduced the incidence of rabies but has not eliminated the disease. For its effective control, all virus carriers should be slaughtered. This is relatively easy for affected dogs. In Schleswig-Holstein, the destruction of foxes and badgers has been quite successful. It has been shown that veterinary police measures when strictly enforced can control rabies in Germany.—[*F. Ruppert: Spread and Prophylaxis of Rabies. Bull. Off. internat. Epizoot., 22, (1954): 65-81.*]—J.P.S.

European Epizootic of Foot-and-Mouth Disease

In the summer of 1951, the enzootic of foot-and-mouth disease passed into the stage of an epizootic and spread from western Germany throughout continental Europe. Two waves of this epizootic developed—one due to a highly infective variant of type A virus, type A^5, the other was due to type C virus.

Dr. Buhl, the director general of veterinary services in Bonn, Germany, showed that variant A^5 was not imported into Germany but was the result of a spontaneous change in the virus already indigenous in the region.

It is possible to divide the countries affected by foot-and-mouth disease into three groups.

Group I—Countries such as Ireland, the United States, Australia, New Zealand, etc. which, in order to protect themselves, have set up efficacious barriers in the form of preventive sanitary regulations that have been strictly enforced.

Group II—Great Britian, Norway, Sweden, and Switzerland (to which Canada may be added) where, for the prevention of any diffusion of the disease, a system of sanitary regulations based on the fundamental utilization of slaughter of infected and contact animals has been put into effect, in addition to vigorous enforcement of suitable methods of disinfection of premises and quarantine.

Group III—Germany, Belgium, Denmark, France, and Italy where the struggle waged has been basically founded upon the practice of vaccination.

Statistical studies of the outbreaks in the three groups clearly show the superiority of those countries of group I where the disease has not occurred in recent years. Countries in group II, where stamping out has been employed, have encountered considerable loss due to the destruction of considerable numbers of animals. However, the losses in countries of group III, where vaccination has been relied upon, have incurred losses far greater than in those in group II. The cost of production and use of the vaccine alone has been greater than the cost incurred in the destruction of infected and contact animals. Vaccination does not eliminate the virus which, like a smouldering fire, can at any moment kindle new outbreaks of infection.—[*G. Ramon: Balance Sheet and Knowledge Obtained from the Epizootic of Foot-and-Mouth Disease. Bull. Off. internat. Epizoot., 41, (1954): 298-314.*]—J.P.S.

Vesicular Stomatitis in Panama

The author describes an outbreak of vesicular stomatitis in the Republic of Panama; teat vesicles as primary and almost exclusive lesions were seen.—[*L. L. J. M. Heirman: Vesicular Stomatitis. Tijdschr. voor Diergeneesk., 79, (Aug. 1, 1954): 588-590.*]—L.V.E.

Intraspinal Meningioma in a Dog

A fully grown Boxer was bitten by another dog in the back at the point of the fourth lumbar vertebra. Five days later, the dog slipped and within two days a paralysis developed, with disturbances in the function of the bladder, rectum, and genital organs, and a nonfunctioning anal reflex. A laminectomy was performed on the fourth lumbar vertebra without myelography. No deviations were found that might explain these symptoms. However, a fibroblastic meningioma was found just caudally to the operative field, which extended over a segment on the dorsal side of the dura. The acute development of the symptoms after the trauma was explained by the in-

crease in the disturbances of the circulation at the point of the tumor.—[*W. Kramer and J. D. Beyers: The Case of an Intraspinal Meningioma in a Dog. Tijdschr. voor Diergeneesk., 79, (1954): 253-259.*]—L.V.E.

Salmonellosis in Pigeons in Norway

A severe outbreak of infectious disease among pigeons occurred in Bergen and environs, lasting from October, 1950, to April, 1951. The greatest losses were during the winter months. Young birds became acutely ill and death occurred in about seven days. Necropsy disclosed marked congestion of organs and serous surfaces, and small areas of necrosis in the liver. Chronic cases among older pigeons were characterized by circumscribed caseous processes which, in some cases, involved the ovaries. Culture and serological studies disclosed the microorganism to be *Salmonella typhimurium* var. *copenhagen*. It was pathogenic for mice and guinea pigs. High titer agglutinating serum could be produced in rabbits but not in pigeons. There were no demonstrable agglutinins in naturally infected pigeons. The microorganism was sensitive to streptomycin, aureomycin,® terramycin,® chloramphenicol, but resistant to penicillin and sulfathiazole.

The outbreak probably resulted from the importation of infected eggs. This variety of Salmonella has been recovered from man in Norway and the disease in pigeons may become a public health problem.—[*Leif Sorum: Infeksjon med Salmonella Typhimurium var. Copenhagen pa duer i Norge (Infection with Salmonella Typhimurium var. Copenhagen in Pigeons in Norway). Nord. Vet.-med., 5, (June, 1953): 385-400.*]—A.G.K.

Dermatoses of Endogenous Origin of the Dog and Cat

The current theories about the development and nature of dermatosis of endogenous origin in dogs and cats appear to have little foundation when studied critically. The author draws attention to the skin itself.—[*H. J. Stol: Dermatoses of Endogenous Origin of the Dog and Cat. Tijdschr. voor Diergeneesk., 79, (Aug., 1954): 616-619.*]—L.V.E.

The Cobalt Content of Bovine Livers

For the determination of the cobalt content of bovine livers, a colorimetric method was used. This method gave satisfactory results when applied to the dried livers of 62 cows which had been used in an experiment to study the influence of an antithyroid substance for fattening purposes. One half of the animals had been treated for five weeks with vevoron, a methyl thiouracil-containing drug. The cobalt content of the livers of the control cows averaged 0.37γ of cobalt per gram of dried liver. Although the weight of the livers of the vevoron-treated animals was considerably higher, they contained no more cobalt than did the livers of the controls.—[*P. C. Hart: An Investigation About the Cobalt Content of Cow Livers. Tijdschr. voor Diergeneesk., 79, (July 15, 1954): 517-527.*]—L.V.E.

Bovine Listerellosis

After a general review of literature concerning listerellosis in ruminants, the authors describe 3 acute nervous-type cases which occurred almost simultaneously in calves, 2 of which recovered. The observed symptoms were totally in accordance with those mentioned by other authors. There is a possibility that latent infection in swine may have been the source of the disease. The isolation of Listeria from the brain was readily done after enrichment by keeping it for a long time in the refrigerator. Identification of these germs was made by means of the eye test in rabbits; however, the latter became positive only after scarification of the conjunctiva. In ruminants, spontaneous listerellosis always affects the nervous system while in other species of animals, as well as in ruminants which are experimentally infected, it always affects the viscera. This suggests the hypothesis that, in nervous listerellosis, the organisms may be associated secondarily with a primary cause, perhaps a virus.—[*L. Geurden and A. Devos: Listerellosis in Bovines. Vlaams Diergeneesk. Tijdschr., 23, (1954): 57-66.*] —L.V.E.

Treatment of Acetonemia with ACTH

After some experiments with cows with primary acetonemia, it appeared that good results could be expected from two injections of 40 I.U. of an ACTH preparation with prolonged activity; these were, however, not better than the results obtained with other well-known therapeutics. One injection of 160 I.U. of the same preparation appeared to result in recovery more often. The author obtained the impression that complete recovery is more certain when the animals eat little during the first day after the injection and do not show an increase in their milk yield. An improvement after twenty-four hours is usually not followed by a relapse.—[*D. Talsma: The Treatment of Acetonemia with an ACTH Preparation with a Prolonged Action. Tijdschr. voor Diergeneesk., 79, (Aug. 15, 1954):620-623.*]—L.V.E.

Movements in the Digestive Tract of Ruminants

Movements in various compartments of the stomach of sheep are specialized to different degrees. The abomasum behaves in a manner similar to the stomach of the dog or cat, after vagal section, in its response to parasympathomimetic drugs. The reticulum seems to be the most specialized part of the stomach and depends entirely on

its vagal connections with the medulla for its major propulsive movements. Its inactivity *in vitro* and its sensitivity to adrenaline suggests that its musculature has somewhat different properties—even if only in degree—than that of the abomasum. The rumen appears to be intermediary between these two organs.—[*A. T. Phillipson: Movements of the Digestive Tract in Ruminants. Vlaams Diergeneesk. Tijdschr., 23, (1953): 113-122.*]—L.V.E.

BOOKS AND REPORTS

The Saint Bernard

This book by J. H. Fleischli, president of the Saint Bernard Club of America, is a Judy book of the Blue Ribbon Series. It presents the origin, history, and development of the Saint Bernard and has 124 pictures and sketches. There are chapters on the anatomy and breeding and a note on relationships with the veterinarian.—[*The Saint Bernard. By Joseph H. Fleischli. 2nd ed. 79 pages. Illustrated. Judy Publishing Co., 3323 Michigan Blvd., Chicago 16, Ill. Price $4.00.*]—W.A.A.

Manual of Infertility and Artificial Insemination in Cattle

A foreword by Sir Thomas Dalling, one of England's most respected and widely read veterinary gynecologists and obstetricians, introduces an interesting text on reproduction of cattle. It is written by P. G. Millar, sterility advisory officer of the Ministry of Agriculture and Fisheries, Weybridge, England, who draws on a wealth of practical experience and resources, and N. P. Ras, chief lecturer of Veterinary College of Buenos Aires.

Section I consists of nine chapters devoted to a thorough but simplified resumé of productive anatomy and physiology and a very practical discussion of the endocrine relationships in both the female and male.

A chapter describing the symptoms of pregnancy as "may be 'seen' by the operator's digital tactile sense through the rectal wall" is enlightening, as are all the word pictures created so deftly by those individuals closely associated with England and the proper English language.

The discussions of clinical examination of the cow as related to infertility are well written and follow a practical outline which could be adopted by any practitioner. Ample information on examination of the bull and evaluation of semen samples is provided.

Genetic, infective, anatomical, and physiological factors affecting reproductive efficiency of the cow and bull are discussed in the eight chapters comprising sections II and III. An up-to-date resumé of trichomoniasis and *Vibrio fetus* infections is presented with evidence of field experience related to both diseases.

Section IV is devoted to a general treatise on artificial insemination of cattle, and the philosophy, techniques, and impact on world economy.

Thirty-nine easily interpreted diagrams or drawings and ten photographic plates add interest and readability to this informative text.—[*Manual of Infertility and Artificial Insemination in Cattle. By P. G. Millar and N. P. Ras. 329 pages. Alexander Eger, Inc., 21 E. Van Buren St., Chicago, Ill. 1954. Price $3.50.*]—H. J. HILL.

Lectures, Third Annual Stud Managers Course

This compilation of 17 lectures on various phases of horse husbandry, amounting to 200 pages and authored by specialists, is a must for all horse breeders. Obviously, any veterinarian serving the horse industry should also have the book.

The lectures were delivered in a sensible, down-to-earth manner and all can be described by one adjective—practical. This series proves just how much the horse-breeding industry depends upon veterinary service but at the same time identifies many unsolved problems that constitute a challenge to the profession.

The research work reported, particularly that work on viruses, was encouraging. This book represents the evaluation of scientific investigation by the horsemen, whose organizations are financing much of the research in this field.

There are a few minor criticisms, such as the vitamin A requirement quoted being too low. As a text for veterinarians, the dearth of references is regretted. However, we recommend that all veterinarians employed by, or interested in, the horse industry, buy this book and read it.—[*Lectures, Third Annual Stud Managers Course. P.O. Box 1520, Lexington, Ky., 1953. Price $2.50.*]—ISAAC E. HAYES.

National Science Foundation Offers Graduate Science Fellowships

National Science Foundation fellowships will be awarded to about 800 United States students who are U. S. citizens and will begin or continue their studies at the graduate level in the life and physical sciences during the academic year 1955-1956. The majority of fellowships will go to students seeking master's or doctor's degrees in science, although about 100 awards will be made to postdoctoral applicants.

Information about eligibility, stipends, and applications may be obtained from the Fellowship Office, National Research Council, 2101 Constitution Ave., N. W., Washington 25, D. C. Closing date for postdoctoral applicants is Dec. 20, 1954, and for graduate students, Jan. 3, 1955. Selections will be announced March 15, 1955.

THE NEWS

Enrollment in Veterinary Medical Schools, 1954-1955

Each September brings a new influx and a new interest at our colleges; and each December the JOURNAL brings a report on the enrollment and other items of interest at the 19 veterinary schools in the United States and Canada.

Table 1 indicates the relative amount of preprofessional college training attained by the freshmen for the years this information has been available. The last column shows the percentage who have college degrees. A year ago there were 235 freshmen with bachelor degrees and 16 with master degrees. This fall there are 253 with bachelor, 10 with master, and 2 with Ph.D. degrees. These, we believe, are not the first veterinary freshmen to have the Ph.D. but not many have had that degree.

The 1,026 freshmen, largest class since World War I, were chosen from 2,614 qualified applicants, a ratio of about 1 : 2.5, compared to about 1 : 3 the past two years and 1 : 4 in 1951.

The special student group is rather loosely defined, but 11 of the 22 are listed as "foreign students." The Ontario school reports 18 women students, seven of whom are in the class of 1958.

TABLE 1—Preprofessional College Training

Freshmen	Years of preveterinary training: 2 yr. (%)	3 yr. (%)	4 yr. or more (%)	Degrees (%)
1947-1948*	41	12	13	.....
1948-1949*				
1949-1950	47	27	26	.....
1951-1952	40	32	28	.....
1952-1953	42	25	33	25.0
1953-1954	41	26	33	25.8
1954-1955	47	23	30	25.8

*Of students admitted during these last years before the two-year requirement became universal in U.S. schools, 34 per cent had one year of preprofessional college training.

For Research on Canine Nutrition — $3,000

The AVMA Research Fund has received a contribution of $3,000 for research on canine nutrition from the Joint Committee on Foods of the AVMA and the A.A.H.A.This contribution is possible because of the surplus accumulated in the treasury of the Joint Committee.

The chairman of the Joint Committee on Foods is Dr. Louis A. Corwin, Richmond Hills, N. Y.; its members include Drs. J. G. Hardenbergh, Chicago, Ill.; C. W. Bower, Topeka, Kan., J. B. Engle, Summit, N. J., and L. C. Moss, Fort Collins, Colo.

Research Fund Receives Donation from Eastern Iowa Association

The Eastern Iowa Veterinary Association passed the following resolution at their annual meeting on Friday, Oct. 15, 1954:

WHEREAS, veterinary research is essential to the progress of our profession,

BE IT THEREFORE resolved that this Associa-

(Continued on page 497)

TABLE 2—Veterinary Student Enrollment for the Academic Year 1954-1955

Schools	Fresh.	Soph.	Jun.	Sen.	Spec.	Grad.	Total 1954	Total 1953	Change
Alabama Polytechnic Institute	70	59	63	66	0	3	261	254	+ 7
California, University of	51	47	52	51	1	5	207	206	+ 1
Colorado A. & M. College	65	62	62	59	0	5	253	253	0
Georgia, University of	63	57	57	60	1	0	238	233	+ 5
Illinois, University of	41	31	29	28	6	11	146	137	+ 9
Iowa State College	70	59	68	57	2	16	272	272	0
Kansas State College	70	60	64	57	0	4	255	247	+ 8
Michigan State College	64	59	60	63	4	18	268	269	− 1
Minnesota, University of	50	48	42	46	0	25	211	214	− 3
Missouri, University of	30	29	30	30	0	5	124	120	+ 4
New York State Veterinary College	51	49	52	47	0	15	214	213	+ 1
Ohio State University	72	70	68	68	3	16	297	295	+ 2
Oklahoma A. & M. College	42	34	33	31	0	0	140	143	− 3
Ontario Veterinary College*	63	50	58	62	2	0	235*	258*	−23
Pennsylvania, University of	55	48	46	45	1	0	195	202	− 7
Quebec Veterinary School*	22	19	21	22	0	0	84*	88*	− 4
Texas A. & M. College	64	53	54	56	2	10	239	235	+ 4
Tuskegee Institute	33	13	16	12	0	0	74	60	+14
Washington, State College of	50	41	42	41	0	6	180	184	− 4
Totals	1,026	888	917	901	22	139	3,893	3,883	+10

*The Canadian schools give a five-year course instead of requiring two years of preprofessional collegiate credit. The first year enrollment (62 at Ontario and 22 at Quebec) therefore are not included.

News From Washington

Appointment of **Ervin L. Peterson,** director of the Oregon State Department of Agriculture, as **Assistant Secretary of Agriculture,** was announced by the White House on October 15.

The new assistant secretary will be in charge of the federal-states relations, which includes the Agricultural Research Service (**see** JOURNAL, Dec., 1953: 548). **He succeeded J. Earl Coke** on November 15, who resigned to return to his former position as director of the Agricultural Extension Service in California, from which he has been on leave. According to Secretary of Agriculture Ezra Taft Benson, Mr. Peterson comes to the Department with nearly a quarter of a century experience in dairy and general farming, and in agricultural leadership and administration. His experience qualifies him outstandingly for heading up our work in the federal-states relations field.

According to information furnished the AVMA Washington office, Mr. Peterson, both as a dairy farmer and in his official position with the Oregon State Department of Agriculture, has had many contacts with members of the veterinary profession.

★ ★ ★

Mr. J. Earl Coke, Assistant Secretary of Agriculture, at the request of the AVMA met with a representative of the Association on October 13 to discuss the **reclassification of veterinary positions in the Department** (already approved by the Civil Service Commission), particularly to see what assistance the AVMA may be to the Department in **putting the revised classification of positions into effect at the earliest practicable date** (**see** JOURNAL, Nov. 1954: 418).

★ ★ ★

The Federal Civil Defense Administration has published a 19-page handbook, **"What the Farmer Should Know About Biological Warfare."** It tells the farmer of the threat to livestock and crops by this means of warfare, and the precautions that should be taken, such as sanitation measures, regular checking of animals, prompt reporting of diseases to his veterinarian or state livestock sanitary official, and the use of approved vaccination practices. Also, it lists a number of motion picture films and publications pertinent to the subject, which are available from the U. S. Department of Agriculture. The handbook may be purchased from the Superintendent of Documents, U. S. Government Printing office, Washington 25, D.C. (price, 15 cents).

★ ★ ★

Veterinarians who are nationals of Germany and have been admitted to the United States for permanent residence must now **register under the "Doctor Draft Act."** According to Selective Service, this requirement applies to all physicians, dentists, and veterinarians who had not yet reached their fiftieth birthday on **Jan. 15, 1951.** However, the prohibition against calling any for service who are 51 years or older will apply to German nationals too. The Selective Service action is due to the expiration of a pre-World War II U.S.-German treaty exempting nationals of each country from military service while living in other countries.

★ ★ ★

According to a ruling of the Internal Revenue Service, published in the October 18 issue of the Internal Revenue Bulletin, **college medical fees are taxable unless itemized.** Where a student pays a lump sum covering tuition and **other expenses,** no part of the sum is deductible as a **medical expense** for tax purposes. If the charge is itemized, or readily obtainable from the University, then it may be considered as an item for deduction under the heading of **medical expenses.**

AVMA Office Address in Washington
Brig. General James A. McCallam (Ret.)
Room 109, 1507 M Street, N.W.
Washington 5, D. C.

(Continued from page 495)

tion donate $200 (two hundred dollars) to the AVMA Research Fund.

The AVMA's Research Council expresses sincere appreciation for this contribution in support of the Research Fellowship program.

Report on Tenth World's Poultry Congress

Dr. E. L. Stubbs, professor of veterinary pathology, University of Pennsylvania, attended the Tenth World's Poultry Congress which was held in Edinburgh, Scotland, Aug. 13-21, 1954. The following brief report was prepared from information supplied by Dr. Stubbs, who took part in the Congress program and also was designated as official representative of the AVMA; he was the official delegate of the University of Pennsylvania School of Veterinary Medicine, also.

Opening exercises of the Congress were held at the University of Edinburgh and were presided over by the Minister of State for Scotland; he welcomed the delegates and called upon the president of the Congress who spoke of its aims and objectives. Following this, the Congress was officially opened by Her Royal Highness, the Princess of Atholone.

The opening session of the Congress was presided over by the Minister of Agriculture for Scotland and was addressed by Dr. I. M. Larner, poultry husbandry department, University of California, on genetics; Dr. T. H. Jukes, Lederle Laboratories, on nutrition; and Dr. Wilson, Lasswade Ministry of Agriculture, on diseases.

There were five sections; genetics and breeding with 27 papers; physiology and nutrition, 30 papers; diseases and their control, 28 papers; economics and marketing, 9 papers; and husbandry and miscellaneous, 16 papers.

A poultry exhibition was held in conjunction with the Congress but was confined to Scottish poultry since the importation of poultry into Scotland was banned in 1949 to prevent introduction of diseases hazardous to the poultry industry, including Newcastle disease which Scotland has never had.

Delegates to the Congress had opportunity for visits to poultry farms and commercial plants in and around Edinburgh; also to the branch laboratory at Lasswade which has a staff of 48 persons engaged in diagnosis and research of livestock and production of biological products. There were also a number of official receptions and entertainment features provided for the delegates.

STUDENT CHAPTER ACTIVITIES

For copy deadline, see "Among the States and Provinces"

Report on Second Annual Congress of the International Union of Veterinary Students.—The second annual congress of the International Union of Veterinary Students (I.V.S.U.) was held at the School of Veterinary Medicine, Alfort, France, from July 18 to Aug. 1, 1954. It was attended by 140 students, of whom 100 were official delegates from 23 countries.

As this was only the second year since the Union's inception, much of the business time was taken up by organizational and constitutional matters, but in spite of this an extremely informative and diversified program was offered, including visits to the renowned Pasteur Institute and Central Research Laboratories.

In his inaugural speech, the French minister for agriculture expressed the hope that extensive results would come of this, the first effort on behalf of the veterinary students of the world, since, the primary problem at the moment to much of the world's population is food, and this of course inevitably involves animals. He heartily endorsed the expressed aims of the congress and promised governmental help wherever possible to their furtherance. At the reception which followed, he welcomed the writer as an observer from the United States and said that in the light of the present economic and political emergence of the United States as the acknowledged world leader, that country's participation in any cooperative enterprise was essential to a true international spirit.

The western hemisphere was represented by six delegates, one each from Chile, Paraguay, Uruguay, and San Salvador, and two from Mexico. Unfortunately, no official delegates from the United States or Canada were present although each veterinary college had been extended an invitation. It is to be hoped that at future congresses the United States will be adequately represented.

The constitution of the I.V.S.U. incorporates as its objectives the promotion of exchange of ideas on professional problems, the exchange of students and their transfer from one college or country to another, and the carrying out and support of courses and tours during vacations. In addition to these, the Congress of 1954 has preparations well advanced toward an international yearbook covering the medical, dental, pharmaceutical and veterinary fields to be published in the spring of 1955 and annually thereafter. This yearbook will be printed in English, French, and Spanish.

As part of the program, the International Office of Epizootics in Paris was visited. This is the coordinating center for the international control of foot-and-mouth disease, bovine tuberculosis, and myxomatosis with which the nations of Europe are at the moment primarily concerned, since the last named has virtually annihilated most of Europe's wild and domestic rabbits. This is much more of a problem than is evident in the United States since rabbit meat constitutes a considerable part of the European diet and the fur industry is largely

dependent on the animals' pelts. As a control measure in this epizootic, the importation of the more resistant American cottontail is noteworthy.

The French National Breeding Farm at Haras du Pin, Normandy, was the subject of a full day's excursion and though greater emphasis is placed on the horse as a working animal than would be justified in this country, an intensive research breeding program is carried on in the racehorse and thoroughbred classes as well as in trotting horses from various countries.

The entire Congress was carried out in an atmosphere of the utmost congeniality and Paris must certainly be one of the most eminently suitable sites for any attempt at international cooperation. The accommodations provided for delegates and observers were superb and the host institution may well take pride in their efforts which made the Congress an educative and cultural highlight in the training of the future veterinarian.

s/ALEX M. D. MALCOLM, *Michigan State College.*

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Missouri Chapter.—The regular monthly meeting of the University of Missouri Student Chapter of the AVMA was held October 11.

A film, "The Rumen Story," was shown, and **Dr. Lee Cary,** Monroe City, discussed establishing a veterinary practice. In the absence of the student representative to the annual meeting of the AVMA, **Drs. Cecil Elder** and **A. H. Groth** gave a report of that meeting.

s/JERRY JOHNSON, *Secretary.*

WOMEN'S AUXILIARY

Student Auxiliaries.—We are proud of our student auxiliaries, "our student girls." Indeed, one is greatly impressed by their accomplishments for many of them are married and work part-time to help support families.

Our constitution states that student membership in the Women's Auxiliary to the AVMA is open to the wives of veterinary students who are members of a student chapter of the Association. Student membership will carry all the privileges and duties of active membership except those of voting and holding office.

Seventeen of the 18 accredited veterinary colleges in the United States and Canada have student auxiliaries, Tuskegee being the only one that has no auxiliary.

The work of the student auxiliaries started at the 1947 meeting in Cincinnati, when Mrs. A. E. Bott met with representatives from the various states. Mrs. O. B. Curry of Indiana was elected vice-president and, as her project, "contacted the dean of each of the accredited veterinary schools and asked for the name of a student wife who might be interested in helping to organize the wives into a group whch would become a student auxiliary." By the 1948 meeting in San Francisco, approximately half of the 12 accredited schools, at that time, had organized and affiliated with the AVMA Auxiliary. Also, some of the others were interested and in

The annual luncheon of the AVMA Women's Auxiliary was held on Tuesday, August 24, in the Masonic Temple in Seattle, during the Ninety-First Annual meeting of the AVMA.

the process of organizing. Student wives' groups previously organized showed their willingness to cooperate by changing their name and their organization to affiliate as a student auxiliary. The first student group to organize was Kansas State in 1940 and the latest is the group at the University of California at Davis.

By the 1949 meeting in Detroit, practically all the accredited schools had groups ready to affiliate or were in the process of organizing, while some schools not yet accredited had their groups organized and were ready to affiliate as soon as the schools were accredited.

At the 1950 meeting in Miami Beach, the AVMA sponsored the first complimentary dinner for all student representatives, together with the officers of the AVMA and the officers of the Women's Auxiliary. Due to the success of this dinner, it has been continued each year. We meet as one happy official family, coming from the four corners of the North American continent, all having the same common bond, all striving to find how best to serve our fellow members. After the general program has been concluded at the supper, the student auxiliary members, sponsors, and friends retire for discussion of common problems.

It was at the 1950 meeting at Miami Beach that the *Newsletter*, now four years old, was born. This *Newsletter* was edited first by Mrs. H. S. MacDonald, followed in succession by Mrs. Russell Runnells, Mrs. L. R. Richardson, and Mrs. E. N. Moore. Indeed, this proved to be tremendously helpful and popular. Six *Newsletters* go out each year, approximately the first of November, December, February, March, April, and May, to the president and secretary of each student auxiliary.

Student auxiliary programs usually consist of one social program each month, including a get-acquainted party and a Christmas party (a basket for a needy family is prepared), and a family picnic in the spring. One or two meetings are held each month for discussions, demonstrations, lectures, and observations of techniques. These student auxiliary wives have many different interests and talents. Therefore, their activities and discussions are varied and unique, each having a keen desire to be a competent all-around wife and helpmate to her husband in his chosen profession.

To date, we have had six groups of student auxiliary members joining the AVMA Auxiliary 100 per cent upon graduation of their husbands. These "100 percenters" are the University of Georgia, 1952; University of Illinois, 1952; Michigan State College, 1953; University of Georgia, 1953; University of California, 1954; and Cornell University, 1954. Don't you think we can triple this record in 1955?

Of the 12 delegates at the Seattle meeting, each one was asked to report on a certain phase of the meeting, which may be incorporated in future *Newsletters*. Judging from interest shown by these delegates, the girls can look forward to another full program at the meeting in Minneapolis, Aug. 15-18, 1955.

These student auxiliaries are a vital part of our national auxiliary. We need their zest, their vivacious vitality, their enthusiasm, and their untiring efforts that is found among our youth in all our veterinary colleges. This is most important as our student auxiliary members of today will be our inspired auxiliary leaders of tomorrow.

The many personal messages from these girls assures me that these "*Newsletters*" to our student auxiliaries are knitting a closer friendship and a greater understanding of veterinary medicine on this continent.

s/(MRS. EARL N.) LEOLA MOORE, *President-Elect.*

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Kansas Student Auxiliary.—The president, Margaret McCullough, presided at the October meeting of the Women's Auxiliary to the Kansas State College Student Chapter of the AVMA. She was assisted by Jackie Buckner, vice-president; Virginia Raspberry, secretary; Peggy Rush, treasurer; and JoAnn Heim, parliamentarian.

Highlight of the meeting was the report by Marilyn Humphrey, delegate to the national AVMA convention in Seattle last summer. She told of the meetings of the students and their auxiliary representatives and the activities and money-making projects which the chapters had sponsored. She mentioned that, since the convention next year will be in Minneapolis, the auxiliary at the University of Minnesota is considering setting up a program for student auxiliary delegates.

Sponsors and committee chairmen were introduced by the president and new members by their hostesses. The interest groups were set up. Get-acquainted games and refreshments followed the meeting.

s/MRS. NANCY BRECHEISEN, *Assistant Reporter.*

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Southern Auxiliary.—The Women's Auxiliary to the Southern Veterinary Medical Association held its annual business meeting following a breakfast on Tuesday morning, Oct. 19, 1954, in the East Ball Room of the George Vanderbilt Hotel in Asheville, N. Car., with Mrs. L. A. Mosher of Roswell, Ga., presiding. There were 71 women present at the breakfast, with the following states represented: Alabama, Georgia, Kentucky, Louisiana, Maryland, North Carolina, South Carolina, Tennessee, Texas, Virginia, and the District of Columbia. During the business session, members voted to donate $25 to the AVMA Student Loan Fund, $25 to the AVMA Research Fund, and $25 to the library fund of the School of Veterinary Medicine of the University of Georgia.

The following officers were elected to serve for 1954-1955: Mrs. H. L. Lamb, Athens, Tenn.,

president; Mrs. J. E. Scatterday, Jacksonville, Fla., president-elect; Mrs. J. L. Sledge, Greensboro, Ala., first vice-president; Mrs. F. M. Kearns, Louisville, Ky., second vice-president; Mrs. C. W. Young, Mocksville, N. Car., secretary; and Mrs. Jack Ross, Jackson, Miss., treasurer.

Besides the breakfast, the women also attended the opening session of the Southern Veterinary Medical Association on Monday morning, and enjoyed a tour of Cherokee Indian Reservation, North Carolina Night Dinner, tour of Biltmore estate, and the president's dinner dance.

s/MRS. J. L. SLEDGE, *Publicity Chairman.*

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California Auxiliary.—The Women's Auxiliary to the California Veterinary Medical Association met in San Diego on June 21-23, 1954, during the meeting of the state Association.

The social calendar included cocktails in the Governor's suite of the Hotel Grant, a card party in the Palm Court, the annual banquet in the main Ballroom of the Hotel, and a pit barbecue.

At the business session, motions were carried to contribute to the following: National Auxiliary Loan Fund, California Medical Research Association, and the AVMA Research Fund.

The following officers were elected: Mrs. Thomas Eville, Fresno, president; Mrs. Charles B. Irvin, Jr., Redlands, first vice-president; Mrs. John C. O'Brien, Sebastopol, second vice-president; and Mrs. Burton F. Pike, Long Beach, secretary-treasurer.

s/MRS. JOHN C. O'BRIEN, *Retiring Secretary.*

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Eastern Iowa Auxiliary.—Mrs. V. B. Vanderloo of Dubuque was elected president of the women's auxiliary of the Eastern Iowa Veterinary Medical Association recently. Other officers are: Mrs. Glen Rieke, Victor; Mrs. Russell Elson, Vinton; Crs. F. E. Brutsman, Traer; and Mrs. Herman Strader, Marion. Mrs. B. C. Lowther of Hopkinton is the retiring president.

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Florida Auxiliary.—The Women's Auxiliary to the Florida State Veterinary Medical Association held its seventh annual meeting at the Soreno Hotel, St. Petersburg, on Oct. 17, 1954.

Mrs. C. E. Bild, president, stated that the projects for 1953-1954 were completed. They were as follows: $25 sent to AVMA Auxiliary Loan Fund; $20 sent to each of the veterinary libraries at Alabama Polytechnic Institute and the University of Georgia. The sum to be used for books is awarded to the library (or libraries) in honor of the freshman university student who makes the highest scholastic average during his first year in the school of veterinary medicine; such book or books purchased with this money are to be inscribed indicating the name of the honoree and the source of the gift.

Newly elected officers for the coming year are Mrs. John Wells, Palm Beach, president; Mrs. M. W. Emmel, Gainesville, first vice-president; Mrs. S. T. Johnson, Jacksonville, second vice-president; Mrs. Paul Myers, Winter Haven, secretary; Mrs. Jack Knowles, Coral Gables, treasurer; and Mrs. T. P. Culpepper, Marianna, member-at-large.

s/MRS. PAUL MYERS, *Secretary.*

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Virginia Auxiliary.—The Women's Auxiliary to the Virginia Veterinary Medical Association met at the Monticello Hotel in Charlottesville on August 8-10, with a large attendance. The interesting program included a delightful luncheon at the Farmington Country Club and a bus tour through the University of Virginia campus and Monticello, the home of Thomas Jefferson.

APPLICATIONS

Applicants — Members of Constituent Associations

In accordance with paragraph (b) of Section 2, Article X, of the Administrative By-Laws, as revised at the annual meeting of the House of Representatives, Aug. 18, 1951, in Milwaukee, Wis., the names of applicants residing within the jurisdictional limits of the constituent associations shall be published once in the JOURNAL.

The following applicants have been certified as members of the constituent association that has jurisdiction over the area in which the applicant resides. This certification was made by the secretary of the constituent association in accordance with Section 2, Article X, of the administrative By-Laws.

First Listing

FISH, NORMAN A.
Ontario Veterinary College, Guelph, Ont.
D.V.M., Ontario Veterinary College, 1942.

LIVINGSTON, W. STEELE
5224 Vineland Ave., North Hollywood, Calif.
D.V.M., Washington State College, 1940.

MABERRY, MATTHEW B.
841 N. E. Broadway, Portland, Ore.
D.V.M., Washington State College, 1947.

SHAPIRO, ALVIN
996½ Vallamont Dr., Williamsport, Pa.
D.V.M., University of California, 1954.

SHAW, SCOTT N.
Rt. 6, Box 881, Salem, Ore.
D.V.M., Indiana Veterinary College, 1916.

WATSON, NEAL H.
113 Church St., Dexter, Maine.
D.V.M., Ontario Veterinary College, 1949.

Applicants — Not Members of Constituent Associations

In accordance with paragraph (b) of Section 2, Article X, of the Administrative By-Laws, as revised at the annual meeting of the House of Representatives, Aug. 18, 1951, in Milwaukee, Wis., notice of all applications from applicants residing outside of the jurisdictional limits of the constituent associations, and members of the Armed Forces, shall be published in the JOURNAL for two suc-

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cessive months. The first notice shall give the applicant's full name, school, and year of graduation, post office address, and the names of his endorsers.

First Listing

FLYNN, JOHN T.
6332 Lindell Ave., Rivera, Calif.
D.V.M., Washington State College, 1944.
Vouchers: F. W. Failing and R. L. Jimison.

HANCOCK, SAMUEL E., JR.
Office of the Port Veterinarian, New Orleans Port of Embarkation, New Orleans, La.
D.V.M., Iowa State College, 1944.
Vouchers: E. E. Branz and R. Cordero.

CEBALLO, HUMBERTO
2da Avenida Entre Calles 12 & 13, Los Jardines de El Valle, Caracas, Venezuela.
D.V.M., Central University of Venezuela, 1946.
Vouchers: E. C. Chamberlayne and C. E. Muskus.

WRIGHT, WILLARD H.
6624 32nd Place, N. W., Washington, D. C.
D.V.M., George Washington University, 1917.
Vouchers: W. T. S. Thorp and R. T. Habermann.

Second Listing

FOSTER, JOSEPH B., 994 Rutland Road, Brooklyn, N. Y.

1954 Graduate Applicants

The following are graduates who have recently received their veterinary degree and who have applied for AVMA membership under the provision granted in the Administrative By-Laws to members in good standing of student chapters. Applications from this year's senior classes not received in time for listing this month will appear in later issues. An asterisk (*) after the name of a school indicates that all of this year's graduates have made application for membership.

First Listing

University of California

SHERMAN, FREDERICK E., D.V.M.
28 Valley St., Pasadena, Calif.
Vouchers: G. K. Kiesel and R. G. Sugg.

TILLEMA, JOHN, D.V.M.
44848 N. Yucca Ave., Lancaster, Calif.
Vouchers: W. J. Zontine and R. H. Jourdan.

Colorado A. & M. College

WOLFF, WILLIAM A., D.V.M.
Rt. 1, Box 457 A, Arvada, Colo.
Vouchers: W. A. Howarth and H. W. Johnson.

University of Illinois

HEMBROUGH, FREDERICK B., D.V.M.
699 Caldwell, Jacksonville, Ill.
Vouchers: L. R. Bain and L. E. Boley.

Second Listing

University of California

STORY, EUGENE C., D.V.M., 4819 V St., Sacramento, Calif.

U. S. GOVERNMENT

Veterinary Personnel Changes.—The following changes in the force of veterinarians in the U.S.D.A. Agricultural Research Service are reported as of Oct. 22, 1954.

NEW APPOINTMENTS

Wayne Binns, Logan, Utah.
Raymond H. Bussewitz, Madison, Wis.
James H. Cass, Jr., Fort Worth, Texas.
Jesse C. Ellis, Jr., Raleigh, N. Car.
Alfred R. Jones, Jr., Fort Worth, Texas.
Eilert H. Kartrude, Davenport, Iowa.
Kazys A. Krivakas, New York, N. Y.
Juozas Kuncaitis, Omaha, Neb.
Matthew E. Legge, Jacksonville, Fla.
Robert Livongxa, Waterloo, Iowa.
Jay H. Miller, San Francisco, Calif.
Richard E. Mott, Oklahoma City, Okla.
Albert Neimans, Denver, Colo.
William O. Ney, Lake Charles, Iowa.
James C. Noland, Des Moines, Iowa.
Kenneth R. Pfister, Waterloo, Iowa.
Lorrain G. Sebree, Des Moines, Iowa.
Stanley B. Seltzer, Baltimore, Md.
Kenneth N. Staples, Milwaukee, Wis.
Robert H. Sterrett, Helena, Mont.
George C. Sturges, Boston, Mass.
Billy J. Swope, Helena, Mont.
Hiram L. Tate, Chicago, Ill.
Fred D. Wood, Los Angeles, Calif.
Harry Zlotnick, Los Angeles, Calif.

CANCELLATION of Appointments

John C. Haromy, Jr., Jacksonville, Fla.
Norman D. Heidelbaugh, Jacksonville, Fla.

RESTORATION After Military Furlough

Fleetwood Hines, Jackson, Miss.
Dorian Lugo-Rubio, San Juan, P.R.
Richard J. Unfer, Denver, Colo.
Saul T. Wilson, Jr., Columbus, Ohio.

DEATHS

Harrison B. Ballou, Albany, N. Y.
George Berger, San Francisco, Calif.
Charles W. Tate, Jackson, Miss.

RESIGNATIONS

Cyrus Bartholomew, Madison, Wis.
John R. Berggren, Madison, Wis.
Willis E. Boisclair, Milwaukee, Wis.
Herman M. Bruechner, Denver, Colo.
William H. Cantwell, Madison, Wis.
Morley H. Cook, South St. Joseph, Mo.
Joseph D. Edens, Atlanta, Ga.
Calvin C. Gatz, San Francisco, Calif.
Joseph E. Guilfoil, Kansas City, Kan.
Roland S. Jeffries, Los Angeles, Calif.
Walter D. Jensen, Sioux City, Iowa.
Wilber C. Kilpatrick, Seattle, Wash.
Roman Kurylas, Sioux Falls, S. Dak.
Bruno Leparakas, Omaha, Neb.
Clial D. McDonald, Salt Lake City, Utah.
Jack S. Palmer, San Francisco, Calif.
William J. J. Pooley, South St. Joseph, Mo.
Jacob J. Schachter, Columbus, Ohio.
Floyd V. Washko, Greenport, L. I., N. Y.
Harry M. Williams, Nampa, Idaho.
Sidney L. Wolf, Philadelphia, Pa.

SEPARATIONS

Alinzo A. Anderson, Helena, Mont.
Angus C. Mincey, Jr., Atlanta, Ga.

SEPARATED (No Return from Military Furlough)

Clark J. Stillinger, Los Angeles, Calif.

RETIREMENTS

Hiram L. Tate, Chicago, Ill.
Earl W. Youngblood, St. Louis, Mo.

TERMINATIONS

Willard G. Adams, Lansing, Mich.
Ralph D. Barner, Denver, Colo.
William E. Ribelin, Amsterdam, Holland.

TRANSFERS

Stephen Antic, from New York, N. Y., to Harrisburg, Pa.
Paul Becton, from Columbus, Ohio, to Little Rock, Ark.
Harry B. Bonallo, from Helena, Mont., to Olympia, Wash.
Louis E. Brunscher from Rouses Point, N. Y., to Fort Worth, Texas.
Augusts Daugulis, from Sioux City, Iowa, to West Fargo, N. Dak.
Lewis L. Jackson, from St. Louis, Mo., to Jackson, Miss.
Oren L. Kelsey, Jr., from Kansas City, Kan., to San Francisco, Calif.
Dan W. Rainey, from Richmond, Va., to Jackson, Miss.
Wilber L. Rehkemper, from Lansing, Mich., to Columbus, Ohio.
Robert D. Schupbach, from Washington, D. C., to Denver, Colo.
Charles P. Smith, from Omaha, Neb., to Lansing, Mich.

AMONG THE STATES AND PROVINCES

The deadline for news copy is the 24th of the month, two months preceding the month of issue.

Alabama

Death of Mrs. Cary.—Mrs. C. A. Cary, 88, widow of the late Dr. C. A. Cary, dean of the School of Veterinary Medicine, Alabama Polytechnic Institute, and state veterinarian for many years prior to his death in 1935, passed away recently at her home in Auburn. She had lived in that community since her marriage sixty years ago. Surviving are one son, Elwyn Allen Cary, two daughters, Mrs. H. T. Shoemaker and Mrs. L. A. Pick, and four grandchildren.

California

Midcoast Association.—At a recent meeting of the Midcoast Veterinary Medical Association, the following officers were elected: Drs. J. R. Whitman, San Luis Obispo, president; J. E. Kleck, Santa Maria, vice-president; and George McCollister, San Luis Obispo, reelected secretary-treasurer.

Following the election, the group held a round-table discussion of animal disease problems common to that area.

s/GEORGE MCCOLLISTER, *Secretary.*

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Central Association.—The October 26 meeting of the Central California Veterinary Medical Association was held in the Pine Room of the Hotel Californian in Fresno. The guest speaker was **Mr. Dee Elwood** of the Yosemite Chinchilla Ranch. Mr. Elwood, a raiser of both mink and chinchillas, discussed the care and management of furbearing animals.

s/HERBERT E. PIPER, *Secretary.*

Georgia

Personal.—Dr. James H. Steele, chief, Veterinary Public Health Section, U. S. Public Health Service, has been awarded the Order of Carlos F. Finley by the president of the republic of Cuba. This is the first time that this order has been awarded to a foreign veterinarian.

Illinois

Conference for Veterinarians.—On Oct. 21-22, 1954, the thirty-fifth annual Illinois conference and extension short course for veterinarians was held at the College of Veterinary Medicine, University of Illinois, in Champaign.

The following guest speakers participated in the program: **Drs. L. R. Bain,** Macomb; **D. E. Bartlett,** American Breeders Service, Chicago; **K. E. Gardner,** professor of dairy production, University of Illinois; **R. A. Grant,** Wyoming, Ill.; **W. C. Logan,** Agricultural Research Service, Urbana; **H. L. Marsh,** Princeton; **R. B. McClelland,** Buffalo, N. Y.; **A. K. Merriam,** Division of Livestock Industry, Springfield; **R. E. Nichols,** University of Wisconsin, Madison; **H. C. Smith,** Allied Laboratories, Sioux City, Iowa; **N. L. VanDemark** (Ph.D.), associate professor of dairy cattle physiology, University of Illinois; and **R. E. Witter,** Danville.

Members of the faculty of the College of Veterinary Medicine also participated in the program. They are: **J. O. Alberts, P. B. Barto, P. D. Beamer, L. E. Boley, B. O. Brodie, H. S. Bryan, R. F. Butzow, D. T. Clark, D. E. Dees, Marian T. Estep, Robert Graham, L. E. Hanson, H. J. Hardenbrook, R. D. Hatch, Deane Anne Houlahan, Virginia Ivens, Sidney Kantor, N. D. Levine, R. P. Link, Dragutin Maksic, M. E. Mansfield, J. P. Manning, Merle Mizell, H. J. Morgan, C. C. Morrill, Marian Norwich, E. F. Reber, E. Jeane Reeves, H. E. Rhoades, A. H. Safanie, L. E. St. Clair, Jesse Sampson, A. G. Schiller, Carlos Schoettle, J. C. Smith, D. J. Sullivan, Richard M. Thomas, A. M. Watrach, Franklin White,** and **D. A. Willigan.**

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Officers of Northern Association.—The following officers were elected at the September 22 meeting of the Northern Illinois Veterinary Medical Association in Rockford: Drs. F. E. Connor, Morris, president; J. W. Boller, Harvard, president-elect; E. C. Hannon, Maple Park, secretary-treasurer. Dr. John Nelson, DeKalb, was elected to the executive board, and Dr. H. P. Wessels, Geneva, to the Illinois Veterinary Medical Association board.

The registration for the meeting was 143 men and 45 women.

s/E. C. HANNON, *Secretary.*

Veterinary Symposium.—The fourth veterinary symposium on the newer knowledge about dogs was held October 20 at the Kankakee Valley Golf Club in Kankakee.

The following speakers presented papers at the scientific session: **Drs. John L. Fuller,** Roscoe B. Jackson Memorial Laboratory; **J. E. Greene,** Alabama Polytechnic Institute, Auburn; **Robert H. Udall,** Colorado A. & M. College, Fort Collins; **James A. Baker,** Laboratory of Diseases of Dogs, Cornell University, Ithaca, N. Y.; **W. C. Banks,** A. & M. College of Texas, College Station; **Clarence R. Cole,** College of Veterinary Medicine, Ohio State University, Columbus; and **Hadley C. Stephenson,** Ithaca, N. Y.

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Dr. Thomas Returns to University.—Dr. R. M. Thomas has returned to the University of Illinois College of Veterinary Medicine after a nine-year absence, to serve as an instructor in the Department of Veterinary Pathology and Hygiene. After resigning his position as field veterinarian for the University in 1946, Dr. Thomas joined the staff of the Tow Animal Hospital in Detroit, later served as food inspector in the Army Veterinary Corps and for the BAI, and then went to the University of Wyoming.

Dr. Thomas is a member of the Wyoming and Intermountain Veterinary Medical Associations and of the AVMA.

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Death of Dr. W. B. Holmes.—Dr. Walter B. Holmes (CVC '11), widely known veterinarian of Springfield, died suddenly of a heart ailment on Oct. 14, 1954, while driving to his home; he was 74 years of age.

Born in Binghamton, N. Y., May 6, 1880, Dr. Holmes received his early education in the public schools and then enrolled at Chicago Veterinary College, from which he received the M.D.C. degree in 1911. He came to Springfield the same year, practiced until 1919 and then organized the Holmes Serum Company which he expanded over the years into one of the largest dispensaries of veterinary supplies in the country.

Dr. Holmes was intensely interested in veterinary and community affairs and devoted much of his time to Masonic activities, particularly the Shrine hospitals for crippled children. Much of his success was due to his friendly personality and sterling integrity. He was a member of Springfield Consistory, Elwood Commandery of Knights Templar, and Ansar Shrine Temple. He had been a member of the AVMA for forty-two years.

He is survived by his widow, Mrs. Eleanor Kirby Holmes, of Springfield.

Indiana

Central Association.—The second annual seminar for small animal medicine, sponsored by the Central Indiana Veterinary Medical Association, was held October 13 at the Hotel Marott in Indianapolis, with 62 veterinarians present from Indiana, Ohio, and Illinois.

The speakers included **Drs. Charles Diesem,** Ohio State University, Columbus; **Wayne Riser,** Skokie, Ill.; **V. G. Crago,** Youngstown, Ohio; and **Tim Brasmer,** Danville, Ill.

The papers were followed by a smorgasbord, and a question-and-answer period rounded out the evening.

s/L. M. BORST, *Secretary.*

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Michiana Association.—The monthly meeting of the Michiana Veterinary Medical Association was held in the Hotel LaSalle, South Bend, on September 9. Following the business meeting, **Dr. Joe Green,** state veterinarian, gave a talk on various state programs. **Dr. Barnes** accompanied Dr. Green and discussed ARS functions in the state.

s/PAUL W. HOUGH, *Secretary.*

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Northwestern Association.—The September 23 meeting of the Northwestern Indiana Veterinary Medical Association was held in Boswell with Dr. and Mrs. Galen Krill and Dr. and Mrs. Dale Kline serving as hosts.

Dr. Fred Hall, Purdue University, spoke on scabies in sheep. Brucellosis control in Indiana was also discussed. Dr. L. E. Glenney of Rensselaer was introduced as a new member.

s/J. L. KIXMILLER, *Resident Secretary.*

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Sixth District Association.—On September 26, the Sixth District (Ind.) Veterinary Medical Association met at the farm of Dr. Kenneth Preston, Veedersburg. **Dr. L. M. Hutchings,** Purdue University, discussed brucellosis and the best means for its control, and **Dr. Joe Green,** state veterinarian, and **Dr. Barnes** of the ARS, brought out some helpful suggestions, after which there was a lively discussion.

Dr. and Mrs. Preston were hosts. A basket dinner was enjoyed by all.

s/J. L. KIXMILLER, *Resident Secretary.*

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Personal.—Dr. L. E. Glenney, formerly of Hebron, Ind., has purchased the office and hospital of Dr. Sherman Byrd in Rensselaer. Dr. Byrd is taking further education in public health at the University of Indiana.

s/J. L. KIXMILLER, *Resident Secretary.*

Iowa

Interstate Association.—The fortieth annual meeting of the Interstate Veterinary Medical Association was held Oct. 28-29, 1954, at the Martin Hotel in Sioux City.

The following speakers presented papers during the scientific sessions: **Drs. E. G. Cole,** Sioux City; **E. J. Frick** and **G. K. L. Under-**

bjerg, School of Veterinary Medicine, Kansas State College, Manhattan; **Charles L. Davis**, veterinarian in charge, U.S.D.A. Animal Disease Research Laboratory, Denver, Colo.; **John McIlnay**, Omaha, Neb.; **Floyd Cross**, Fort Collins, Colo., president-elect of the AVMA; **A. H. Craige, Jr.**, Veterinary Medical Department, Pitman-Moore Co., Plainfield, Ind.; **John W. Gowen**, Iowa State College, Ames; **Ralph L. West**, Livestock Sanitary Board, St. Paul, Minn.; and **John M. Aiken**, South Sioux City, Neb.

In addition to the papers, the following films were also presented: "Scrapie" (California Department of Agriculture), "Teschen Disease" (U.S.D.A.), "Vesicular Exanthema" (U.S.D.A.), and "The Vicious Circle" (U.S.D.A.).

s/K. W. SMITH, *Secretary.*

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Eastern Association.—The forty-first annual meeting of the Eastern Iowa Veterinary Association was held Oct. 14-15, 1954, at the Hotel Montrose in Cedar Rapids.

The following speakers presented papers: **Drs. R. J. Kirkpatrick**, Galesburg, Ill.; **V. M. Reinhart**, Norway, Iowa; **E. A. Woelffer**, Oconomowoc, Wis.; **Lester Proctor**, Oelwein; **A. H. Quin**, Kansas City, Mo., president of the AVMA; **W. S. Gochenour**, Pitman-Moore Co., Indianapolis, Ind.; **John Janss**, Belle Plaine; **J. D. Ray**, Affiliated Laboratories Corp., White Hall, Ill.; **J. D. Ramsey**, Tipton; **Burton L. Bushnell**, Manchester; **B. S. Pomeroy**, University of Minnesota, St. Paul; **David W. Gregory**, Washington, Iowa; **Frank Thorp, Jr.**, Michigan State College, East Lansing; **Birk C. Lowther**, Hopkinton; **C. K. Pfaff**, Fort Dodge Laboratories, Fort Dodge; and **John W. Carey**, West Liberty.

The new officers are Drs. Warren E. Bowstead, Louden, president; C. G. Moore, Toledo, vice-president; Wayne Thompson, Earlville, secretary; William Lynch, Cedar Rapids, treasurer; and W. J. Kilpatrick, Mediapolis, trustee.

s/WAYNE H. THOMPSON, *Secretary.*

Kansas

Northeast District Association.—On October 3, the Northeast District (Kan.) Veterinary Medical Association was held at the state fair grounds in Topeka.

The program speakers were **Drs. M. J. Twiehaus, J. L. West**, and **M. W. Osburn** of the School of Veterinary Medicine, Kansas State College, Manhattan. The program consisted of demonstrations of various poultry diseases by means of necropsies conducted on birds furnished by Kansas State College. A demonstration new to most of those in attendance was the collection of blood samples directly from the heart of the chicken.

The day's activities closed with a dinner at the Hotel Kansas. Drs. J. S. Haley, M. D. Rockhold, C. W. Bower, and L. A. Howell, all of Topeka, acted as hosts for the meeting. Drs. F. L. Hart and other Brown and Nemaha County veterinarians will be hosts at the next meeting to be held at Hiawatha in December.

s/K. M. CURTS, *Resident Secretary.*

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Central District Association.—The Central District (Kan.) Veterinary Medical Association met in the Hotel Warren, McPherson, on October 17.

Mr. A. Glen Pickett, Kansas state livestock sanitary commissioner, of Topeka, spoke briefly and answered questions concerning livestock regulations and the problems which arise in carrying out these regulations. The activities began with a buffet supper, following which the women were entertained with slides of Dr. M. F. Scoby's recent trip to the AVMA convention in Seattle.

Dr. and Mrs. M. F. Scoby, McPherson, were hosts for the meeting.

s/K. M. CURTS, *Resident Secretary.*

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Southeast District.—On October 19, the Southeast District (Kan.) Veterinary Medical Association met at the Chanute Saddle Club in Chanute to hear **Dr. James C. Trace** of Fort Dodge, Iowa, discuss rumen implants.

The evening's activities began with a "mountain oyster" banquet provided by the hosts, Dr. and Mrs. S. Lester Jackson of Hiattville.

s/K. M. CURTS, *Resident Secretary.*

Massachusetts

New England Association.—The twentieth annual conference of the New England Veterinary Medical Association was held at New Ocean House in Swampscott on Oct. 7-9, 1954.

Scientific papers were presented by the following speakers: **Drs. David L. Coffin**, pathologist, **Jean Holzworth**, staff member, **Todd O. Munson**, staff member, and **Gerry B. Schnelle**, chief-of-staff, Angell Memorial Animal Hospital, Boston; **Roy Feemster** (M.D.), director of the State Department of Public Health, Boston; **James M. Faulkner** (M.D.), dean, School of Medicine, Boston University, Boston; **John Gadd**, Cockeysville, Md.; **W. S. Gochenour**, Pitman-Moore Co., Indianapolis, Ind.; **L. B. Jensen**, Swift and Co., Chicago; **Kyu M. Lee** (M.D., Ph.D.), Veterinary Virus Research Institute, Cornell University, Ithaca, N. Y.; **John T. McGrath**, School of Veterinary Medicine, University of Pennsylvania, Philadelphia; **Laurent Michaud**, Merck and Co., Rahway, N. J.; **Sten-Erik Olsson**, Royal Veterinary College, Stockholm, Sweden; **Niel Pieper**, Middletown, Conn.; **A. H. Quin**, Kansas City, Mo., president of the AVMA; **Stephen J. Roberts**, New York State Veterinary College, Cornell University, Ithaca, N. Y.; and **William Townsend** (M.D.), assistant director, Division of Communicable

Diseases, Massachusetts Department of Public Health, Boston.

s/C. LAWRENCE BLAKELY, *Secretary.*

Michigan

Dr. Thorp Honored.—Dr. Frank Thorp, Jr., research professor of animal pathology in the agricultural experiment station at Michigan State College, recently received an unusual award. At the noonday telecast of the farm program on station WWJ-TV (Detroit), John Merrifield, the station's farm program manager, Dr. Louis R. Newlin, president of the Michigan Veterinary Medical Association, and Dr. Chester F. Clark, dean of the School of Veterinary Medicine, participated in making the award. The certificate read:

Certificate of Merit

On behalf of the farmers of Michigan, the livestock industry, and the Michigan State Veterinary Medical Association: This Certificate of Merit is awarded to

DR. FRANK THORP, JR.

In recognition of his meritorious services in the field of research in diseases of domestic animals. Given this ninth day of October, 1954.

Larrowe Region, Division of General Mills.
Michigan State Veterinary Medical Association.
WWJ-TV, Detroit.

• • •

Southeastern Association.—On October 27, the Southeastern Michigan Veterinary Medical Association met at the Croatian Center near Detroit. The guest speaker was **Dr. James Archibald**, Ontario Veterinary College, Guelph, Ont., who discussed general surgery.

s/GILBERT MEYER, *Secretary.*

Minnesota

University Offers Extension Course in Veterinary Urology.—During the academic year of 1953-1954, a series of lectures and demonstrations in the anatomy, physiology, and medical diseases of the eye of domestic animals was offered by the School of Veterinary Medicine, University of Minnesota. This course was organized and presented by Dr. Robert E. Monahan, M.D., of the Department of Ophthalmology of the School of Medicine. In view of the enthusiasm and interest with which this course was accepted by graduate veterinarians in this area, an extension course in veterinary urology will be offered during the 1954-1955 school year. This course will be conducted by Dr. Milton P. Reiser of the Department of Urology of the School of Veterinary Medicine, University of Minnesota.

s/HENRY J. GRIFFITHS.

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Southern Society.—The Southern Minnesota Veterinary Medical Society met in Austin on Sept. 29, 1954. **Dr. Eldon G. Hill,** Hormel Institute, spoke on swine nutrition research; **Dr. Alvin J. Sellers,** School of Veterinary Medicine, University of Minnesota, discussed bloat in cattle; and **Dr. W. T. S. Thorp,** director of the School of Veterinary Medicine at the University of Minnesota, spoke briefly on the future of a good veterinary school in Minnesota.

The following officers were elected: Drs. J. L. Cavanaugh, Plainview, president; R. B. Helming, Cresco, Iowa, vice-president; G. A. Young, Austin, secretary-treasurer. The following were elected to the board of directors: Drs. R. W. Rieke, Fairmont, and J. H. Dunnwald, Waterville.

The next meeting of the Society will be May 25, 1955, in Austin.

s/HENRY J. GRIFFITHS.

Missouri

Kansas City Association.—On October 12, members of the Kansas City Veterinary Medical Association met in the Livestock Exchange Building to hear **Dr. F. W. Schofield,** staff member, Ontario Veterinary College, Guelph, discuss disease problems of swine and calves. Dr. Schofield was awarded the Twelfth International Veterinary Congress prize at the AVMA Seattle meeting this summer in recognition of his services as an outstanding teacher, research worker, and author.

s/J. C. DAVIS, *Secretary.*

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Dr. English Joins Faculty of Veterinary School.—Dr. James E. English (COL '43) joined the faculty of the School of Veterinary Medicine, University of Missouri, Columbia, recently. Dr. English formerly practiced in Cody, Wyo., and has the rank of assistant professor of veterinary medicine and surgery. He will serve as one of the ambulatory clinicians in that department.

s/A. H. GROTH, *Dean.*

Nebraska

U. S. Livestock Sanitary Association.—The fifty-eighth annual meeting of the U. S. Livestock Sanitary Association was held at the Hotel Fontanelle, Omaha, on Nov. 10-12, 1954.

Scientific papers were presented by the following speakers: **Drs. A. F. Ranney,** Washington, D. C.; **James H. Steele,** U. S. Public Health Service, Atlanta, Ga.; **J. S. Kiser** (Ph.D.) and **G. C. de Mello** (B.S.), Pearl River, N. Y.; **William P. Switzer,** Ames, Iowa; **E. H. Bohl,** Columbus, Ohio; **C. D. Stein,** Washington, D.C.; **Carl Olson, Jr., D. Segre, L. V. Skidmore,** Lincoln, Neb.; **Albert L. Brown** (Ph.D.), **Alan W. Creamer,** and **S. F. Scheidy,** West Point, Pa.; **C. D. Van Houweling,** U. S. Department of Agriculture, Washington, D. C.; **C. L. Campbell,** Tallahassee, Fla.; **Fernando Camargo,** Mexico City, D. F.; **H. W. Schoening,**

Washington, D. C.; **Ernest S. Tierkel,** Atlanta, Ga.; **Donald J. Dean,** Albany, N. Y.; **Herald R. Cox** (Sc.D.) and **Hilary Koprowsky** (M.D.), Pearl River, N. Y.; **B. T. Simms,** chief, Animal Disease and Parasite Branch, ARS, U.S.D.A., Washington, D. C.; **A. K. Kuttler,** Washington, D. C.; **F. S. Brenner,** Grant, Mont.; **E. R. Good, Jr., T. E. Amerault** (B.S.), and **C. A. Manthei,** Beltsville, Md.; **Wayne N. Plastridge,** Storrs, Conn.; **H. E. Kemper,** Albuquerque, N. M.; **L. A. Spindler** (Sc.D.) and **John S. Andrews** (Sc.D.), Washington, D. C.; **H. G. Hodges,** Ithaca, N. Y.; **Martin P. Kaplan,** Geneva, Switzerland; **I. Forrest Huddleson,** East Lansing, Mich.; **Val Peterson,** Federal Civil Defense Administration, Washington, D. C.; **D. A. Price,** Sonora, Texas; **D. G. McKercher, J. E. Moulton,** and **D. E. Jasper,** Davis, Calif.; **R. P. Hanson,** Sonora, Texas; **F. R. Beaudette, Preston L. Holden, J. J. Black, J. A. Bivins, C. B. Hudson,** and **D. Tudor,** New Brunswick, N. J.; and **W. C. Patterson** and **J. R. Songer** (B.A.), College Park, Md.

In addition to the scientific papers, reports of the various committees were also presented.

s/RALPH A. HENDERSHOTT, *Secretary.*

New Jersey

Southern Association.—The Veterinary Medical Association of Southern New Jersey held its first meeting of the season on October 19 in Dr. S. A. Fittipaldi's hospital in Collingswood. During the business session, the following officers were elected: Drs. Harold Summers, Mount Holly, president; L. B. Davis, Clementon, vice-president; F. J. Olbrich, Blackwood, treasurer; and George W. Tyler, Pitman, secretary.

A demonstration of ear cropping in Boxers was given by **Dr. S. Fittipaldi** and his staff. This was a timely subject since it has been legal in the state since last June.

s/GEORGE W. TYLER, *Secretary.*

New York

State Society.—The annual meeting of the New York State Veterinary Medical Society was held in Saranac Inn, Saranac Inn, on Sept. 15-17, 1954. The meeting was well attended, with many out-of-state guests present, including veterinarians from Canada, Connecticut, Vermont, Pennsylvania, Missouri, Mashachusetts, and New Jersey. **Dr. Walter D. Way,** president, gave a progress report and recommendations for the future.

Two members of the medical profession, **Dr. Walter F. Bugden,** Syracuse Medical College, and **Dr. Harold J. Harris,** Westport, presented papers.

Some of the prominent out-of-state speakers were: **Drs. Wade O. Brinker,** School of Veterinary Medicine, Michigan State College, East Lansing; **Joseph C. Shaw,** Dairy Department, University of Maryland, College Park, Md.; and **David K. Detweiler,** School of Veterinary Medicine, University of Pennsylvania, Philadelphia.

Other outstanding speakers were: **Drs. W. A. Hagan,** dean, New York State Veterinary College, Ithaca; **Dr. Shefford S. Miller,** Larchmont; and **Mr. Corydon T. Finn,** Attorney, New York City.

The small animal session consisted, in part, of papers by **Drs. Robert W. Kirk,** New York State Veterinary College, Ithaca; **Clarence P. Zepp, Jr.,** New York City; and **Hadley C. Stephenson,** consultant, Cornell Research Laboratory for Diseases of Dogs, Veterinary Virus Research Institute, Ithaca.

Members of the faculty of the New York State Veterinary College, Ithaca, N. Y., who took part in the program were **Drs. Peter Olafson, Robert W. Dougherty, Donald D. Delahanty,** and **Donald W. Baker.**

The New York State Veterinary Medical Society has always received excellent cooperation from the various State Departments. This year, papers were presented by **Drs. Donald J. Dean,** New York State Department of Health, Albany; **Winfield S. Stone,** ARS, New York State Department of Agriculture and Markets, Albany; and **Clifford W. Wilder,** Animal Disease, Eradication Branch, U. S. Department of Agriculture.

Member practitioners who contributed to the large animal session were **Drs. Howard J. Cleveland,** Cattaraugus; **Frank E. McClelland Sr.,** Kenmore; **Harrison V. Baker,** Hamburg; and **Milton H. Covert,** Rochester.

Two of the permanent entertainment features which provide keen competition each year and stimulate much interest are the golf and skeet shot tournaments. Each has three or more classes and the winners are presented with trophies at the banquet. The banquet program also includes the presentation of a certificate of merit to the retiring member of the Board of Veterinary Medical Examiners. This year, Mr. Robert C. Killough, Jr., assistant commissioner for professional education of the New York State Education Department, presented the certificate to Dr. James D. Sweet, Chateaugay.

Dr. William J. Sellman, Utica, who served as treasurer for fifteen years, was presented with a pen and pencil set.

Dr. Clyde L. Kern, Scarsdale, president-elect, will automatically take the office of president on Jan. 1, 1954. Dr. Harry G. Hodges, Ithaca, was elected president-elect and Dr. William J. Sellman, Utica, was re-elected treasurer.

The 1955 meeting will be held at Hotel Statler, New York City, N. Y., on September 14 to 16.

s/JOAN S. HALAT, *Acting Executive Secretary.*

New York City Association.—A special meeting of the Veterinary Medical Association of New York City, Inc., was held at the Bear Mountain Inn, Bear Mountain, N. Y., on October 13.

The program was a symposium for the small animal practitioner and consisted of the following participants: **Drs. Henry E. Grossman,** Brooklyn; **Roger E. Brown,** Lansing, Mich.; **N. B. Tennille,** Oklahoma A. & M. College, Stillwater; **Lester R. Barto,** Basking Ridge, N. J., president of the Association; **Russell E. Rebrassier, C. Roger Smith,** and **Clarence R. Cole,** College of Veterinary Medicine, Ohio State University, Columbus; **Laurence W. Goodman,** Manhasset; and **Morris Pollard,** University of Texas, Galveston.

Invitations to this symposium were sent to the memberships of the Long Island, Westchester, Hudson Valley, Catskill, Northern New Jersey, and Metropolitan New Jersey associations as well as the New York City Association. The total registration for this meeting was 246.

A cocktail reception for all those in attendance brought this highly informative symposium to a most enjoyable conclusion.

s/C. E. DECAMP, *Secretary.*

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Conference of Public Health Veterinarians.—At the annual meeting of the Conference of Public Health Veterinarians in Buffalo, Oct. 11, 1954, the following speakers addressed the Conference: **Drs. James N. Murphy,** New York State Veterinary College, Ithaca; **Stanley L. Hendricks,** Des Moines, Iowa; **Major U. S. Grant Kuhns, III,** V.C., U.S.A.F., Oak Ridge, Tenn.; and **Drs. Hiliary Koprowski, M.D.,** Lederle Laboratories, Pearl River, N. Y.; **Donald J. Dean,** New York State Health Department; **James E. Scatterday,** Florida State Board of Health; **L. E. Starr,** Georgia Department of Public Health; and **Ernest S. Tierkel,** director, rabies control activities, Veterinary Public Health Section, U. S. Public Health Service.

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Cayuga County Association.—The first meeting of the Cayuga County Veterinary Medical Association was held Oct. 6, 1954, at the Goodrich House in Locke, under the temporary chairmanship of Dr. Gordon G. Morrow. Eleven of the 12 practicing veterinarians in the county were present. The guest speaker was **Dr. Kenneth A. Tice,** state veterinarian.

The following officers were elected: Drs. Paul Wilkes, Cate, president; and Gordon G. Morrow, Locke, secretary-treasurer.

s/GORDON G. MORROW, *Secretary.*

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Personal.—Dr. Clark A. Taylor has purchased the practice of Dr. Alvin Evans at 456 Albany Ave., Kingston, N. Y.

North Carolina

Death of Dr. B. F. Kaupp.—Dr. Benjamin F. Kaupp (KCV '95), widely known authority on poultry diseases and author of several texts in that field, died on May 27, 1954, at Raleigh, N. Car., at the age of 80.

Born in Williamsport, Pa., Dr. Kaupp received the B.S. and M.S. degrees at Colorado A. & M. College and then enrolled at Kansas City Veterinary College, graduating in 1895. From 1896 to 1904 he was a BAI inspector, then joined the faculty of the Kansas City Veterinary College for four years, later taught pathology at Colorado A. & M., and was pathologist at the experiment station. From 1912 to 1914, he was commissioner of public health at Spartanburg, S. Car., then spent sixteen years at North Carolina State College as professor of poultry science and head of the poultry department. In 1933, he joined the Salsbury poultry disease school in Iowa and later did editorial work for other commercial organizations.

He was active in veterinary circles for many years, having been secretary and later president of the old Missouri Valley Veterinary Association.

Among the books authored by Dr. Kaupp were "Poultry Diseases" published in 1914, "Poultry Culture, Sanitation and Hygiene," 1924, and several revisions of the first-named volume. He was a member of the AVMA for some twenty-five years.

Ohio

Death of Dr. Thomas W. Craver.—Dr. Thomas W. Craver, prominent small animal practitioner of Youngstown, died suddenly on Oct. 3, 1954, following a heart attack, at the age of 50 years.

Born May 4, 1904, in Youngstown, Dr. Craver was the son of a veterinarian and with his brother, Nevin S., carried on the practice which their father, Samuel R., had established many years ago. Dr. Tom Craver received his veterinary degree from Ohio State University in 1929, having first obtained an A.B. degree in business administration from the University. Always active in professional and community affairs, he joined the AVMA in 1933 and was president of the American Animal Hospital Association in 1946-1947.

Dr. Craver is survived by his widow, Margaret; a son, Richard; a daughter, Sarah Lee; his brother, Nevin; and a sister.

Pennsylvania

Veterinary School Celebrates Seventieth Anniversary.—A special convocation of the faculty and student body of the School of Veterinary Medicine, University of Pennsylvania, was held on Oct. 2, 1954, to mark the seventieth anniversary of the admission of the first class

of 20 students to the University's newly created department of veterinary medicine. **Dean Mark Allam** addressed the assembly and stressed the responsibilities of the veterinary profession in relation to the rapidly increasing population of the United States, the need for greater production of livestock and poultry for production of animal food products, and better control of the many diseases of animals transmissible to man.

Dean Allam also spoke of the added research facilities the school had acquired at New Bolton Research Center and other important advances in its educational program.

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New Bolton Research Center Dedicated.—The University of Pennsylvania's new animal research center, known as New Bolton Center, was dedicated Oct. 16, 1954. The Center is located on a 221-acre tract of land near Kennett Square, Chester County, in a rich agricultural area of southeastern Pennsylvania.

In the past two years, a state poultry diagnostic laboratory and a Department of Preventive Medicine and Hygiene have been established there. The original Bolton Farm, a gift to the University in 1937, was in Bucks County. The Center is a popular meeting place for various organizations interested in livestock and poultry problems.

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Symposium on Anthrax in Man.—A symposium on anthrax in man was held at the hospital of the University of Pennsylvania, Philadelphia, Oct. 8, 1954. Among those participating were **Drs. Martin Kaplan** of the World Health Organization, Geneva, Switzerland; **Milton Werrin**, Department of Public Health, City of Philadelphia; and **James H. Steele**, U. S. Public Health Service, Atlanta, Ga.

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Personal.—Dr. L. H. Jacobson has announced the opening of his office on the Sunbury-Shamokin highway, four miles east of Sunbury.

South Dakota

State Association.—The annual meeting of the South Dakota Veterinary Medical Association was held at the Cataract Hotel in Sioux Falls, Oct. 14-15, 1954.

The program speakers were **Drs. Glen Duncan**, Tyndall; **W. F. Waddell**, state veterinarian, Pierre; **M. M. Davis**, veterinarian in charge, ARS, Pierre; **R. I. Port**, Sundance, Wyo.; **John M. Higbee**, Albert Lea, Minn.; **T. A. Dorsey**, Department of Veterinary Science, South Dakota State College, Brookings; **V. W. Gesellchen**, Corn States Serum Co., Omaha, Neb.; **John Dewar**, Cherokee, Iowa; **Loyal C. Payne**, Division of Veterinary Medicine, Iowa State College, Ames; and **Alvin B. Hoerlein**, Department of Animal Pathology and Hygiene, University of Nebraska, Lincoln.

At the business session, the following officers were elected: Drs. J. P. Harman, Watertown, president; C. W. Yunker, Sioux Falls, vice-president; and J. L. Noordsy, Marion, secretary-treasurer. The following board members were also elected: George Chaffee, Huron; Tom Mott, Mobridge; H. C. Severson, Winner; and Glen Hover, Astoria. In addition to these, the Association officers are also members of the board.

s/J. L. NOORDSY, *Resident Secretary.*

Virginia

State Association.—The semiannual meeting of the Virginia Veterinary Medical Association was held at the Monticello Hotel, Charlottesville, on Aug. 8-10, 1954, with approximately 150 veterinarians, their wives, and families in attendance. The veterinarians represented 14 veterinary colleges.

The following speakers addressed the group: **Drs. I. E. Altman**, Brooklyn, N. Y.; **W. L. Bendix**, Richmond, state veterinarian; the Hon. **Parke C. Brinkley**, commissioner of agriculture, Richmond; **M. G. Fincher**, New York State Veterinary College, Ithaca, N. Y.; **M. E. Hibbard**, public health veterinarian, Richmond; the Hon. **William H. Hill**, mayor, Charlottesville; **Drs. B. F. Hoerlein**, School of Veterinary Medicine, Alabama Polytechnic Institute, Auburn; **Frank Kral**, School of Veterinary Medicine, University of Pennsylvania, Philadelphia; **W. D. Pounden**, Wooster, Ohio; **E. E. Ruebush**, Silver Spring, Md.; and **H. C. Stephenson**, New York State Veterinary College, Ithaca.

s/A. J. SIPOS, *Secretary.*

Washington

South Puget Sound Association.—The South Puget Sound Veterinary Medical Association held its first meeting of the year in September at the Western Washington Experiment Station in Puyallup. The following officers were elected: Drs. Donald R. Vetter, Raymond, president; George D. Duby, Centralia, vice-president; Irwin Erickson, Puyallup, secretary-treasurer; and Jo Walker, Puyallup, corresponding secretary. The following were elected to the board of trustees: Drs. David Brinkman, Bremerton; C. M. Hamilton, Puyallup; and A. C. Slater, Olympia.

s/JO WALKER, *Corresponding Secretary.*

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State Association Exhibit at Fair.—The Washington State Veterinary Medical Association made its first appearance in the professional exhibits at the Western Washington Fair in Puyallup in September. Over 350,000 persons attended this fair. Among other displays, the booth of the state Association featured "Vesta," through the courtesy of Gaine's Research Center.

s/JO WALKER.

Wisconsin

Conference for Veterinarians.—Approximately 100 veterinarians registered for the sixth annual Wisconsin postgraduate conference for veterinarians at the University of Wisconsin, Madison, on Oct. 7-8, 1954.

The following guest speakers presented papers: **Drs. B. A. Beach,** professor emeritus of veterinary science, Verona; **S. C. Bernhardt,** Cassville; **Howard Brooks,** Bloomington; **J. R. Curtis,** Portage; **C. C. Ellis, S. E. Ferguson,** and **T. H. Ferguson,** Lake Geneva; **R. E. Hall, A. F. Krohn,** and **E. P. Pope,** Wisconsin Division of Livestock Sanitation, Madison; **R. E. Hauke,** Eau Claire; **R. B. Hipenbecker,** Fennimore; **B. F. Hoerlein,** School of Veterinary Medicine, Alabama Polytechnic Institute, Auburn; **A. W. Krause,** Cherokee, Iowa; **B. L. Lawlor,** Shullsburg; **G. J. Marold,** Milwaukee; **A. M. McDermid,** Middleton; **F. W. Milke,** Milwaukee; **C. L. Nelson,** Jewell, Iowa; **O. Norling-Christensen,** Wilmette, Ill.; **H. J. O'Connell,** chief, Wisconsin Division of Livestock Sanitation, Madison; **C. H. Reading,** Madison; and **Thomas W. Tuttle,** Fort Atkinson.

Members of the staff of the Department of Veterinary Science and other departments at the University of Wisconsin also participated in the program.

s/H. J. O'CONNELL, *Resident Secretary.*

FOREIGN NEWS

Africa

Containing Rinderpest with a Fence.—In Africa in 1941, when rinderpest was reported in the area, a wooden palisade fence 167 miles long was erected along the Rhodesian-Tanganyika border. Three men were assigned to every 6 miles to keep the fence in repair and maintain a game-free zone 20 miles in depth. Because of the cost, disbandment of the project is under consideration.—*Vet. Bull., Sept., 1954.*

Argentina

Stud Book Argentino Discontinued.—The Agricultural Research Service recently announced that the book of record of purebred Arabian thoroughbred horses, entitled "Stud Book Argentino," published by the Jockey Club, Buenos Aires, Argentina, has been discontinued, since the sponsoring organization no loger exists.

Peru

Fighting Bulls Spread Foot-and-Mouth Disease.—An outbreak of foot-and-mouth disease in the Central Sierra region of Peru, in July, 1954, was believed to have ben caused when some fighting bulls, which were probably infected, were illegally brought by truck from Lima by evading the cordon sanitario.—*Voice of the Veterinarian, July-Aug., 1954.*

VETERINARY MILITARY SERVICE

Brigadier General Kester Honored.—During the annual meeting of the AVMA in Seattle, Brigadier General Wayne O. Kester (KSC '31) assistant for Veterinary Services, Office of the Surgeon General, headquarters U. S. Air Force, was designated an Honorary Fellow of the American Board of Veterinary Public Health "for his professional and administrative accomplishments in the field of military veterinary medicine and the resultant contribution to the advancement of veterinary public health. . . ."

General Kester is the first Air Force officer to receive this distinguished award. He has administered the Veterinary Service since the separate establishment of the Air Force in July, 1949, and has twenty-two years of active military service.

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New Assignment for Colonel Snider.—Lieutenant Colonel Charles H. Snider, V.C., U.S.A.F., recently assumed the duties of assistant chief, Professional Division, Veterinary Services, in the Office of the Surgeon General, Headquarters, U. S. Air Force. He replaces Major Frederick W. Clayton who is presently receiving graduate public health training at the School of Public Health, Tulane University.

Colonel Snider had just completed a thirty-month tour with the U.S.A.F. in Europe prior to his new assignment, and prior to that had completed the first advance course in veterinary radiological health at Oak Ridge, Tenn. In addition to his D.V.M. degree, Colonel Snider also has a degree in public health from the University of Michigan.

BIRTHS

Dr. (MSC '46) and Mrs. J. Douglas McCluskie, Denver, Colo., announce the birth of a daughter, Jody Rae, on Aug. 13, 1954.

Dr. (UP '47) and Mrs. Lloyd B. Kornblatt, Metuchen, N. J., announce the birth of twins, Madelyn Rochele and Marc Bowen, on Sept. 13, 1954.

Dr. (API '47) and Mrs. John R. Broussard, Jr., Biloxi, Miss., announce the birth of their sixth child, a daughter, Linda Susan, on Sept. 14, 1954.

Dr. (COL '48) and Mrs. James G. Hardenbergh, Rockton, Ill., announce the birth of a daughter, Kathy Jean., on Sept. 28, 1954.

Dr. (GA '54) and Mrs. Richard E. Bradley, Athens, Ga., announce the birth of their third son, Richard Eugene, Jr., on Sept. 30, 1954.

Dr. (UP '52) and Mrs. Frank A. Bartus,

West Brownsville, Pa., announce the birth of a son, Frank Albert II, on Oct. 12, 1954.

Dr. (WSC '52) and Mrs. D. R. Robertson, Excelsior Springs, Mo., announce the birth of a daughter, Sandra Camille, on Oct. 14, 1954.

Dr. (COL '54) and Mrs. John W. Hadley, Aurora, Neb., announce the birth of a son, John Guy, on Oct. 21, 1954.

DEATHS

Ralph D. Abarr (KCV '06), 76, Blockton, Iowa, died June 8, 1954. Dr. Abarr had practiced in Blockton for forty-three years.

Eugene S. Allen (CVC '15), Chatham, Va., died Oct. 1, 1954. Dr. Allen, a general practitioner, had practiced in Chatham for nearly forty years.

Harrison B. Ballou (OSU '13), 65, Staten Island, N. Y., died Oct. 2, 1954. Dr. Ballou, a livestock inspector with the Agricultural Research Service, U.S.D.A., was a member of the National Association of Federal Veterinarians and had been a member of the AVMA.

★**Edgar H. Barger** (KSC '21), 59, Lafayette, Calif., died Sept. 5, 1954. Dr. Barger, a veteran of World War I, was employed by the Borden Co. of California as director of quality control for the past twenty-six years. He was admitted to the AVMA in 1926. Dr. Barger is survived by his widow.

William O. Bates (IND '20), Springport, Ind., died in July, 1954. Dr. Bates was a general practitioner.

★**George Berger** (OSU '35), 52, San Jose, Calif., died Sept. 8, 1954. Dr. Berger, who was with the Agricultural Research Service, was a member of the National Association of Federal Veterinarians and of the AVMA.

★**Henning E. Bergh** (SF '09), 70, San Francisco, Calif., died Nov. 21, 1953. Dr. Bergh, who was born in Sweden, had practiced in Fairfield-Suisun, Rio Vista, Dixon, and Vacaville for more than forty years. In recent years, since he had suffered a paralytic stroke, he had made his home with his daughter, Mrs. Fred Duplissa of San Francisco, who is his only surviving relative. Dr. Bergh had been a member of the AVMA for thirty-six years.

Clifford Burbridge (KCV '09), Pittsfield, Ill., died June 14, 1954.

Robert K. Byrd (TUS '51), 30, Mathis Air Force Base, Calif., died during the summer of 1952. Dr. Byrd, as a reserve officer, was called to active duty with the U. S. Air Force and was on active duty at the time of his death.

Charles M. Crandall (KCV '03), 85, Seneca, Kan., died May 28, 1954. Dr. Crandall, who retired about a year ago, had practiced in Seneca for almost fifty years.

★**Thomas W. Craver** (OSU '29), 50, Youngstown, Ohio, died Oct. 3, 1954. Dr. Craver was a member of the AVMA. An obituary appears on page 507 of this JOURNAL.

Peter J. Haley (UP '12), 73, Roxborough, Pa., died June 19, 1954. Dr. Haley had specialized in equine practice.

★**Walter B. Holmes** (CVC '11), 74, Springfield, Ill., died Oct. 17, 1954. An obituary appears on page 503 of this JOURNAL.

Benjamin F. Kaupp (KCV '95), 80, Charlotte, N. Car., died May 27, 1954. An obituary appears on page 507 of this JOURNAL.

★**Fred W. Lange** (COL '23), 68, Salem, Ore., died Aug. 5, 1954. Dr. Lange served for twelve years on the Oregon Veterinary Medical Examining Board and took an active part in writing and revising the Oregon veterinary practice laws. Dr. Lange also served on the Procurement and Assignment Board in his district during World War II, was a veteran of World War I, a Mason, chairman of the local civil defense committee, and had been a member of the AVMA since 1923. He also was a past-president of the Oregon Veterinary Medical Association and an active member in the Northwest Veterinary Medical Association. His widow, Sarah Daisy Lange, survives him.

Daniel H. Leary (MCK '07), Boscobel, Wis., died July 19, 1954. Dr. Leary was a general practitioner.

★**Dawson C. Murdock** (CVC '05), 82, Omaha, Neb., died Oct. 18, 1954. Dr. Murdock had served with the U. S. Bureau of Animal Industry for more than forty-six years. His early work was with foot-and-mouth disease and cattle tick eradication in the South. The last several years, prior to his retirement in 1942, he was an inspector in Omaha. He was a member of the National Association of Federal Veterinarians and was a life member of the AVMA. Dr. Murdock is survived by his widow and a daughter.

Charles D. Owens (IND '07), Westport, Ind., died recently as the result of an automobile accident. Dr. Owens was a general practitioner.

Charles A. Stewart (UP '04), Alnin, Iowa, died May 14, 1954. Dr. Stewart had been employed by Cudahy Packing Company.

★**Charles W. Tate** (TEX '38), 40, Springfield, Va., died June 15, 1954. Dr. Tate had served in the Veterinary Corps of the U. S. Army during World War II, attaining the rank of major. At the time of his death he was employed by the Agricultural Research Service, U. S. Department of Agriculture. Dr. Tate was a member of the National Association of Federal Veterinarians, the Texas, Mississippi, and Virginia Veterinary Medical Associations, and of the AVMA.

George Waddle (ONT '85), 94, Kalamazoo, Mich., died April 11, 1954. Dr. Waddle, who retired about ten years ago, had been a member of the AVMA.

Morris H. Walmer (USC '02), Baltimore, Md., died May 26, 1954. Dr. Walmer had been a member of the AVMA.

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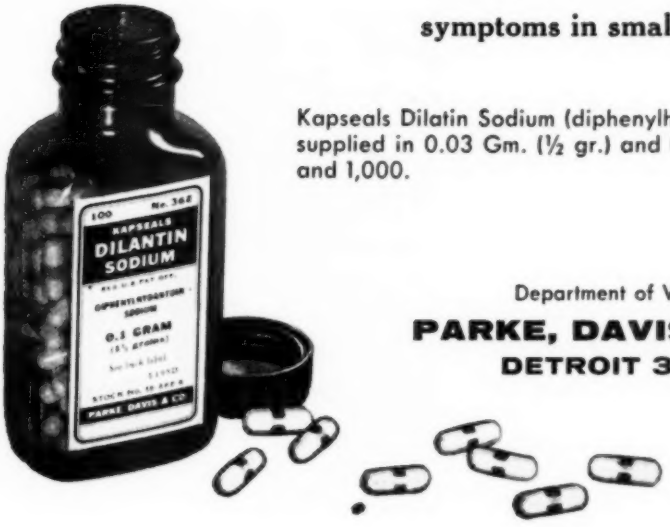

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Department of Veterinary Medicine

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COMING MEETINGS

Notices of Coming Meetings must be received by 4th of month preceding date of issue

Animal Care Panel. Annual meeting. Thorne Hall, Northwestern University, Chicago Campus, Chicago, Ill., Dec. 1-2, 1954. N. R. Brewer, 951 East 58th St., Chicago 37, Ill.

Nebraska State Veterinary Medical Association. Annual meeting. Hotel Cornhusker, Lincoln, Neb., Dec. 1-3, 1954. W. T. Spencer, 1250 North 37th Street, Lincoln, Neb., secretary.

Armed Forces Institute of Pathology. Short Course. Armed Forces Institute of Pathology, Washington 25, D. C., Dec. 6-10, 1954. Brig. Gen. Elbert DeCoursey, M.C., U. S. Army, director.

Kentucky Veterinary Medical Association. Semiannual meeting. Ken-Lake Hotel, Hardin, Ky., Dec. 8-9, 1954. R. J. Ausherman, 171 N. Upper St., Lexington, Ky., secretary.

University of Pennsylvania. Annual conference for veterinarians. School of Veterinary Medicine, University of Pennsylvania, Philadelphia, Pa., Jan. 4-5, 1955. W. LaGrange, chairman.

Arkansas Veterinary Medical Association. Annual meeting. Hotel Marion, Little Rock, Ark., Jan. 4-6, 1955. Wm. L. Thomas, 906 Broadway, Little Rock, Ark., secretary.

New York State Veterinary College. Annual conference for veterinarians. New York State Veterinary College, Cornell University, Ithaca, N. Y., Jan. 5-7, 1955. W. A. Hagan, dean.

Ohio State Veterinary Medical Association. Annual meeting. Deshler-Hilton Hotel, Columbus, Ohio, Jan. 5-7, 1955. William S. Konold, 50 East Broad Street, Columbus 15, Ohio, executive secretary.

Kansas Veterinary Medical Association. Annual convention. Town House Hotel, Kansas City, Kan., Jan. 6-8, 1955. K. Maynard Curts, 70 Central Ave., Kansas City 18, Kan., secretary.

Tennessee Veterinary Medical Association. Annual meeting. Knoxville, Tenn., Jan. 9-11, 1955. H. W. Hayes, 734 Broadway, North East, Knoxville, Tenn., secretary.

Oklahoma Veterinary Medical Association. Annual meeting. Biltmore Hotel, Oklahoma City, Okla., Jan. 10-11, 1955. C. H. Fauks, 3421 N. W. 20 St., Oklahoma City, Okla., secretary.

Indiana Veterinary Medical Association. Annual meeting. Hotel Severin, Indianapolis, Ind., Jan. 12-14, 1955. W. W. Garverick, Zionsville, Ind., secretary.

Wisconsin Veterinary Medical Association. Annual meeting. Schroeder Hotel, Milwaukee, Wis., Jan. 12-14, 1955. B. A. Beach, 1215 Vilas Ave., Madison, Wis., secretary.

Ontario Veterinary Association. Annual meeting. King Edward Hotel, Toronto, Ont., Jan. 13-15, 1955. G. A. Edge, Box 37, Postal Station F, Toronto 5, Ont., secretary.

Texas Veterinary Medical Association. Annual meeting. Hotel Texas, Fort Worth, Texas, Jan. 16-18, 1955. Paul B. Blunt, 710 Maverick Bldg., San Antonio, Texas, secretary.

Intermountain Veterinary Medical Association. Annual meeting. Hotel Utah, Salt Lake City, Utah, Jan. 17-19, 1955. Wayne Binns, 555 N. Third St. E., Logan, Utah, secretary.

Iowa Veterinary Medical Association. Annual meeting. Hotel Fort Des Moines, Des Moines, Iowa, Jan. 18-20, 1955. F. B. Young, Waukee, Iowa, executive secretary.

Virginia Veterinary Medical Association. Annual meeting. Hotel John Marshall, Richmond, Va., Jan. 23-25, 1955. A. J. Sipos, 1102 State Office Bldg., Richmond, Va., secretary.

California State Veterinary Medical Association. Annual midwinter conference. Haring Hall, University of California, Davis, Calif., Jan. 24-26, 1955. Charles S. Travers, San Francisco, Calif., executive secretary.

Minnesota State Veterinary Medical Society. Annual meeting. Hotel Nicollet, Minneapolis, Minn., Jan. 24-26, 1955. B. S. Pomeroy, School of Veterinary Medicine, University of Minnesota, St. Paul 1, Minn., secretary.

North Carolina Veterinary Medical Association. Annual conference. North Carolina State College, Raleigh, N. Car., Jan. 25-28, 1955. C. D. Grinnells, North Carolina State College, chairman.

(Continued on p. 30)

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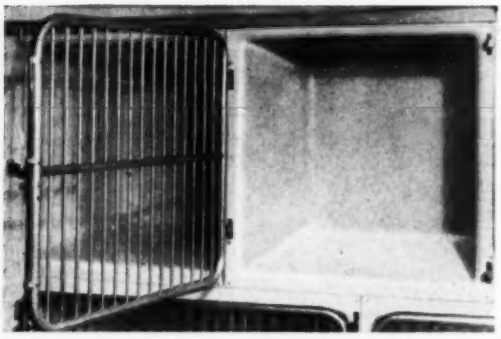

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(COMING MEETINGS—*continued from p. 28*)

Maryland State Veterinary Medical Association. Annual winter meeting. Lord Baltimore Hotel, Baltimore, Md., Jan. 27-28, 1955. John D. Gadd, Cockeysville, Md., secretary.

Oregon State Veterinary Medical Association. Annual meeting. Multnomah Hotel, Portland, Ore., Jan. 28-29, 1955. E. L. Holden, Osergo, Ore., secretary.

Louisiana State University. Annual conference for veterinarians. Louisiana State University, Baton Rouge, La., Feb. 1-2, 1955. W. T. Oglesby, head, Department of Veterinary Science.

New Jersey, Veterinary Medical Association of. Annual meeting. Hotel Essex House, 1050 Broad St., Newark, N. J., Feb. 3-4, 1955. J. R. Porteus, P. O. Box 938, Trenton 5, N. J., resident secretary.

Illinois State Veterinary Medical Association. Annual meeting. LaSalle Hotel, Chicago, Ill., Feb. 13-16, 1955. C. B. Hostetler, 1385 Whitcomb Ave., Des Plaines, Ill., executive secretary.

Missouri Veterinary Medical Association. Annual meeting. Hotel Jefferson, St. Louis, Mo., Feb. 21-22, 1955. Anthony R. Bott, 102 Osage Dr., Collinsville, Ill., chairman, local arrangements.

Colorado A. & M. College. Annual conference for veterinarians. Glover Veterinary Hospital, School of Veterinary Medicine, Colorado A. & M. College, Fort Collins, Colo., Feb. 21-23, 1955. O. R. Adams, professor and director of clinics and surgery.

Washington, State College of. Annual conference for veterinarians. College of Veterinary Medicine, Washington State College, Pullman, Wash., April 4-6, 1955. R. W. Leader, State College of Washington, Pullman, Wash.

American Animal Hospital Association. Annual meeting. Hotel Statler, Detroit, Mich., May 4-7, 1955. Wayne H. Riser, Skokie, Ill., executive secretary.

Maryland State Veterinary Medical Association. Summer meeting. George Washington Hotel, Ocean City, Md., June 23-24, 1955. John D. Gadd, Cockeysville, Md., secretary.

American Veterinary Medical Association. Annual meeting. Municipal Auditorium, Minneapolis, Minn., Aug. 15-18, 1955. J. G. Hardenbergh, 600 S. Michigan Ave., Chicago 5, Ill., executive secretary.

New York State Veterinary Medical Society. Annual meeting. Hotel Statler, New York, N. Y., Sept. 14-16, 1955. Joan S. Halat, 803 Varick St., Utica, N. Y., acting executive secretary.

(*Continued on p. 32*)

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(COMING MEETINGS—*continued from p. 30*)

Regularly Scheduled Meetings

Atlanta Veterinary Society, the first Tuesday of every month. C. L. Bromley, Jr., 1634 Northside Dr., Atlanta Ga., secretary.

Baltimore City Veterinary Medical Association, the second Thursday of each month, September through May (except December), at 9:00 p.m. at the Park Plaza Hotel, Charles and Madison Streets, Baltimore, Md. Victor I. Sorgen, 133 Wiltshire Rd., Baltimore 21, Md., secretary.

Bay Counties Veterinary Medical Association, the second Tuesday of each month. George W. Eberhart, El Cerrito, Calif., secretary.

Cedar Valley Veterinary Association, the second Monday of each month, except July and August, at Black's Tea Room, Waterloo, Iowa. D. A. Buchanan, Grundy Center, Iowa, secretary.

Central California Veterinary Medical Association, the fourth Tuesday of each month. Herbert Piper, 4990 Ventura Ave., Fresno, Calif., secretary.

Central Carolina Veterinary Medical Association, the second Wednesday of each month at 7:00 p.m. in the O'Henry Hotel in Greensboro. Dr. J. S. Ellis, 2450 Battleground Ave., Greensboro, N. Car., secretary.

Central Indiana Veterinary Medical Association, the second Wednesday of each month. L. M. Borst, 3315 Shelby St., Indianapolis, Ind., secretary.

Chicago Veterinary Medical Association, the second Tuesday of each month. Wayne H. Riser, 5335 Touhy Ave., Skokie, Ill., secretary.

Coastal Bend Veterinary Association (Texas), the second Wednesday of each month. J. E. Hoban, 4301 S. Port Ave., Corpus Christi, Texas, secretary.

Coon Valley Veterinary Association, the second Wednesday of each month, September through May, at the Bradford Hotel, Storm Lake, Iowa. J. R. Rosdail, Pomeroy, Iowa, secretary.

Cuyahoga County (Cleveland, Ohio) Veterinary Medical Association, the first Wednesday of each month—September through May (except January)—at 9:00 p.m. at the Carter Hotel, Cleveland, Ohio. Roger W. Grundish, 4217 Mayfield Road, South Euclid 21, Ohio, secretary.

East Bay Veterinary Medical Association, bimonthly, the fourth Wednesday. Robert Clemens, 23352 Orchard, Hayward, Calif., secretary.

Eastern Illinois Veterinary Medical Association, the first Thursday of March, June, September, and December. A one-day clinic is held in May. L. E. St. Clair, College of Veterinary Medicine, University of Illinois, Urbana, Ill., secretary.

(*Continued on p. 34*)

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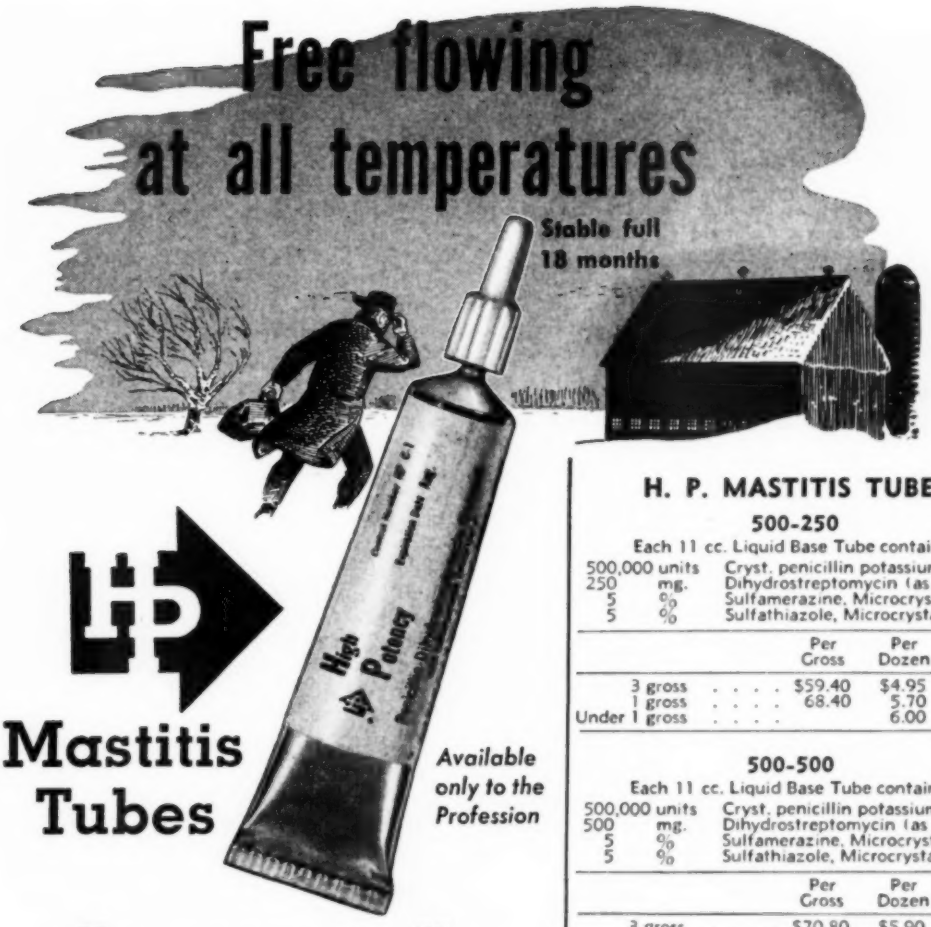

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Eastern North Carolina Veterinary Medical Association, the first Friday of each month, time and place specified monthly. C. B. Randall, Kinston, N. Car., secretary.

Fayette County Veterinary Association, Iowa, the third Tuesday of each month, except in July and August, at Pa and Ma's Restaurant, West Union, Iowa. Donald E. Moore, Box 178, Decorah, Iowa, secretary.

Florida, North-East Florida Veterinary Medical Association, the second Thursday of each month, time and place specified monthly. J. O. Whiddon, 829 San Marco Blvd., Jacksonville, Fla.

Greater St. Louis Veterinary Medical Association, the first Friday of the month (except July and August) at the Sheraton Hotel, Spring Ave. and Lindell Blvd. Luther E. Fredrickson, Room 11, Municipal Courts Bldg., St. Louis, Mo., secretary.

Houston Veterinary Medical Association, Houston, Texas, the first Thursday of each month. Edward Lepon, Houston, Texas, secretary-treasurer.

Illinois Valley Veterinary Medical Association, the second Sunday evening of even-numbered months at the Jefferson Hotel, Peoria, Ill. S. M. McCully, Lacon, Ill., secretary.

Indiana Tenth District Veterinary Medical Association, third Thursday of each month. L. A. Snider, New Palestine, Ind., secretary.

Jefferson County Veterinary Society of Kentucky, Inc., the first Wednesday evening of each month, in Louisville or within a radius of 50 miles. Dr. W. E. Bewley, P.O. Box "H", Crestwood, Ky., secretary.

Kansas City Small Animal Hospital Association, the first Monday of each month, at the Hotel Continental. J. A. Zacher, 3632 Main St., Kansas City, Mo., secretary.

Kansas City Veterinary Medical Association, the third Tuesday of each month, at the Exchange Hall, Ninth Floor, Livestock Building, 1600 Genesee, Kansas City, Mo. J. C. Davis, 7332 Canterbury St., Kansas City 13, Mo., secretary.

Kern County Veterinary Medical Association, the first Thursday of each month. R. A. Stiern, 17 Niles St., Bakersfield, Calif., secretary.

Keystone Veterinary Medical Association, the Philadelphia County Medical Society Building, 301 S. 21st Street, Philadelphia, Pa., on the fourth Wednesday of each month. Raymond C. Snyder, 39th and Woodland Ave., Philadelphia 4, Pa., secretary.

Kyowva Veterinary Medical Association, the

(*Continued on p. 36*)

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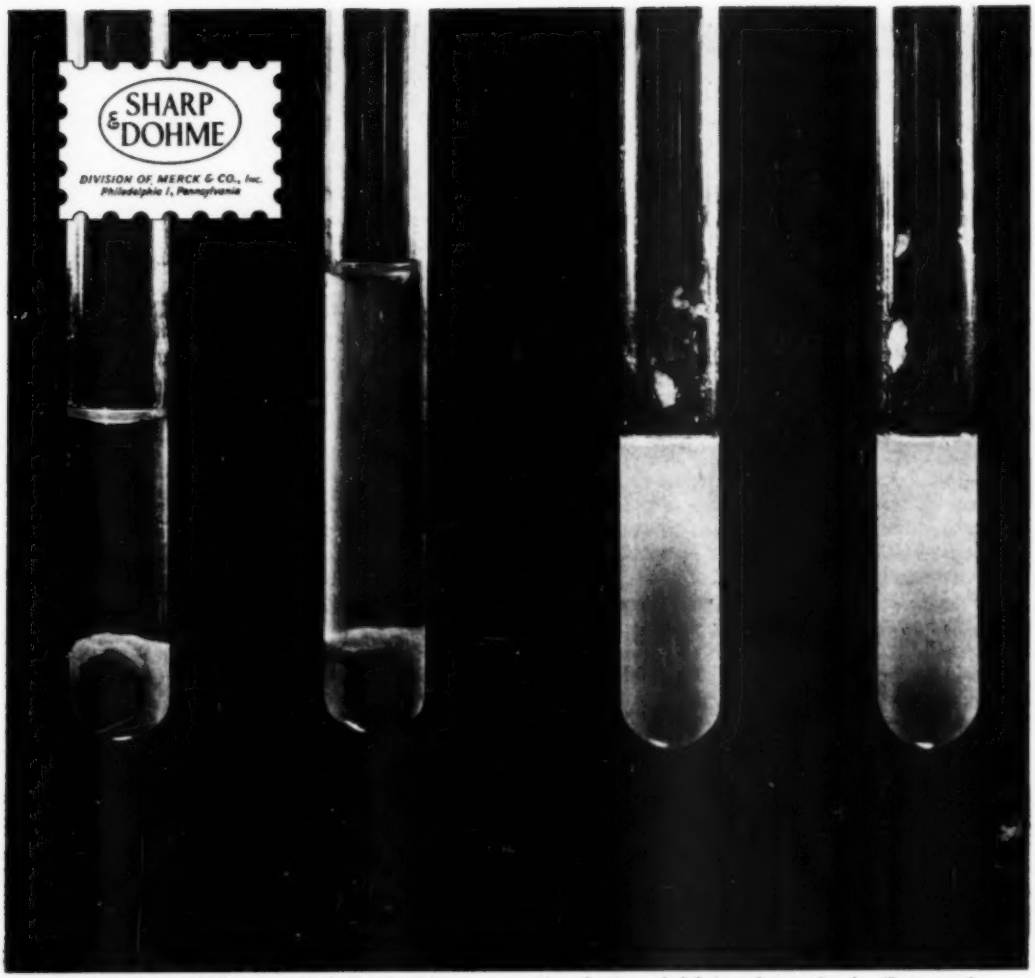

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(COMING MEETINGS—*continued from p. 34*)

second Thursday of each month in the Hotel Prichard, Huntington, W. Va., at 8:30 p.m. Karl Mayer, 1531 Fourth Ave., Huntington, W. Va., secretary.

Maricopa County Veterinary Association, the second Tuesday of each month. Charles J. Prchal, 1722 East Almeria Road, Phoenix, Ariz., secretary.

Metropolitan New Jersey Veterinary Medical Association, the third Wednesday evening of each month from September through May, at the Academy of Medicine of Northern New Jersey, 91 Lincoln Park South, Newark, N. J. Myron S. Arlein, 2172 Millburn Ave., Maplewood, N. J., secretary.

Michiana Veterinary Medical Association, the second Thursday of each month, at the Hotel LaSalle, South Bend, Ind. Paul W. Hough, 829 Bryan St., South Bend, Ind., secretary.

Michigan, Southeastern Veterinary Medical Association, the second Thursday of every month, September through May. Gilbert Meyer, 14003 E. Seven Mile Road, Detroit 5, Mich., secretary.

Mid-Coast Veterinary Medical Association, the first Thursday of every even month. George McCollister, 2146 Broad St., San Luis Obispo, Calif., secretary.

Milwaukee Veterinary Medical Association, the third Tuesday of each month, at the Half-Way House, Blue Mound Rd. George F. Lynch, 201 West Devon St., Milwaukee 17, Wis., secretary.

Mobile-Baldwin Veterinary Medical Association, the first Tuesday of each month at the Hotel Admiral Simmes, Mobile, Ala. C. Eric Kennedy, Mobile, Ala., secretary.

Monterey Bay Area Veterinary Medical Association, the third Wednesday of each month. Lewis J. Campbell, 66 Marion Ave., Salinas, Calif., secretary.

New Castle County (Del.) Veterinary Association, the first Tuesday of each month at 9:00 p.m. in the Hotel Rodney, Wilmington, Del. Arthur P. Coogan, 2102 New Road, Wilmington 5, Del., secretary.

New York City, Veterinary Medical Association of, the first Wednesday of each month at the New York Academy of Sciences, 2 East 63rd St., New York City. C. E. DeCamp, 43 West 61st St., New York 23, N. Y., secretary.

Northern Colorado Veterinary Medical Association, the second Monday of each month. William D. Carlson, P.O. Box 478, Fort Collins, Colo., secretary.

Northern New Jersey Veterinary Association, the fourth Tuesday evening from September through June, at the Casa Mana Restaurant, Cedar Lane, Teaneck, N. J. Robert R. Shomer, 1680 Teaneck Road, N. J., secretary.

(*Continued on p. 38*)

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(COMING MEETINGS—*continued from p. 36*)

Northern San Joaquin Valley Veterinary Medical Association, the fourth Wednesday of each month. Tom Hagan, Gen. Del., Escalon, Calif., secretary.

Oklahoma County Veterinary Medical Association, the second Wednesday of every month except August and July. R. J. Keller, 1701 N. Highland Drive, Oklahoma City, Okla., secretary.

Orange Belt Veterinary Medical Association, the second Monday of each month at 7:00 p.m. in the Antlers Hotel, San Bernardino, Calif. William J. Kelber, 1111 West A St., Ontario, Calif., secretary.

Orange County Veterinary Medical Association, bi-monthly. Donald E. Lind, 2643 N. Main, Santa Ana, Calif., secretary.

Peninsula Veterinary Medical Association, the third Monday of each month. P. H. Hand, Box 1035, Millbrae, Calif., secretary.

Piedmont Veterinary Medical Association, the last Friday of each month at 7:00 p.m. in Mull's Motel in Hickory, N. Car. G. V. McCranie, Hickory, N. Car., secretary.

(*Continued on p. 40*)

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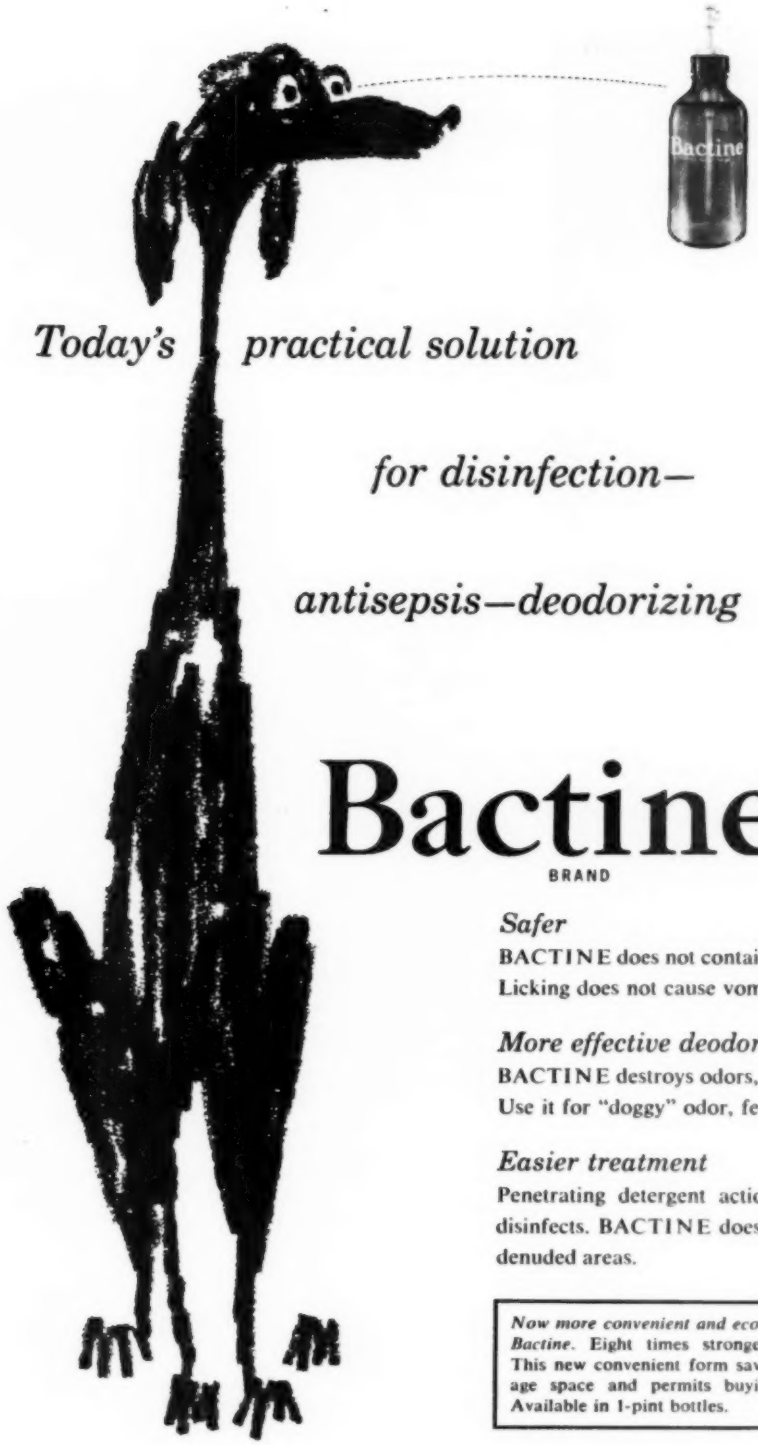

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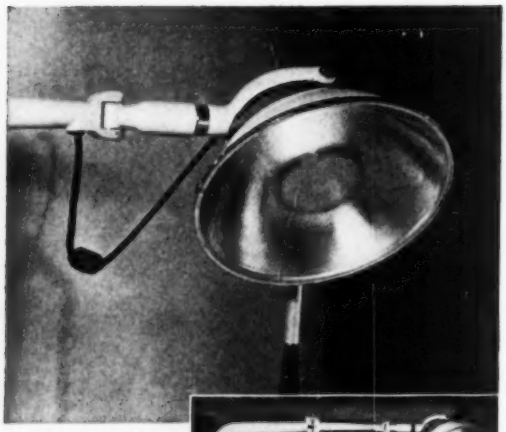

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(COMING MEETINGS—*continued from p. 38*)

Pima County (Arizona) Veterinary Medical Association, the third Wednesday of each month, in Tucson. R. W. Adami, 2103 S. 6th Ave., Tucson, Ariz., resident secretary.

Portland (Oregon) Veterinary Medical Association, the second Tuesday of each month, in the Auditorium of the Upjohn Company. Victor T. Oliver, 9705 S.W. Barbur Blvd., Portland 19, Ore., secretary.

Redwood Empire Veterinary Medical Association, the third Thursday of each month. H. M. Strandberg, 203 D St., Petaluma, Calif., secretary.

Sacramento Valley Veterinary Medical Association, the second Wednesday of each month. S. M. Foster, 430 College, Woodland, Calif., secretary.

Saginaw Valley Veterinary Medical Association, the last Wednesday of each month. F. Ferguson, 1702 S. Dort Highway, Flint, Mich., secretary.

San Diego County Veterinary Medical Association, the fourth Tuesday of each month except July and August. E. R. Quortrup, 4005 Rosecrans St., Building 2, San Diego, Calif., secretary.

San Fernando Valley (California) Veterinary Medical Association, the second Friday night of each month at Eaton's Restaurant in Studio City, Calif. Howard C. Taylor, 2811 W. Olive Ave., Burbank, Calif., secretary.

Santa Barbara-Ventura Counties Veterinary Medical Association, Friday evenings every sixth week. Dee Wodars McDermott, 5879 Hollister, Coleta, Calif., secretary.

Seattle Veterinary Medical Association, the third Monday of each month in the home of Dr. Fred Cummings, 5828-5th, N.W., Seattle, Wash.

Southern California Veterinary Medical Association, the third Wednesday of each month. Rankin W. McIntyre, 203 Administration Building, Union Stockyards, Los Angeles, Calif., secretary.

South Florida Veterinary Society, the third Tuesday of each month, at the Seven Seas Restaurant, Miami, Fla. E. A. Majilton, 1093 N. E. 79th St., Miami, Fla., secretary.

Tulsa Veterinary Medical Association, the third Thursday of each month, in Director's Parlor of the Brookside State Bank, Tulsa, Okla. John Carnes, Muskogee, Okla., secretary.

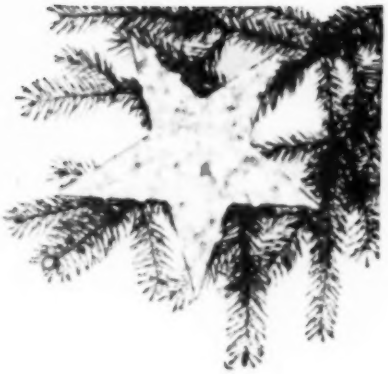
WHITE'S ANIMAL CASTRATION

A new textbook for TEACHERS, STUDENTS and PRACTITIONERS.

Price $7.50

For sale by book dealers, also by the Author, George Ransom White, M.D., D.V.M., P. O. Lock Box 901, Nashville, Tennessee.

the boy and the Star



He is old enough now to know that the ornament on the tree is more than a star . . . to understand the deeper meaning of Christmastime.

Now he knows that it is love that has been shining on the tree year after year, the love that has wrapped and held him . . . that has given him food and warmth and laughter and the promise of joy to come.

Life's great reward is the privilege of giving security to those we love.

And, think: When you make *your* home secure you are also helping make America secure. For the strength of America grows as the number of its secure homes increases.

Saving for security is easy—on the Payroll Savings Plan for investing in United States Savings Bonds.

This is all you do. Go to your company's pay office, choose the amount you want to save—a few dollars a payday, or as much as you wish. That money will be set aside for you before you even draw your pay. And automatically invested in United States Series "E" Savings Bonds which are turned over to you.

If you can save only $3.75 a week on the Plan, in 9 years and 8 months you will have $2,137.30.

U.S. Series "E" Savings Bonds earn interest at an average of 3% per year, compounded semiannually, when held to maturity! They can go on earning interest for as long as 19 years and 8 months if you wish.

If you want interest as current income ask your bank about 3% Series "H" Bonds which pay interest semiannually by Treasury check.

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electric firing iron in case — firing thoroughbred

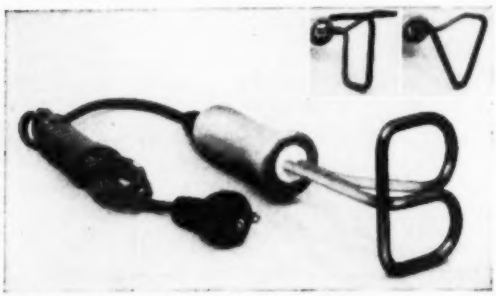
New NICHOLSON hi-current firing iron gives even heat on half the current

Our new 1955 *hi-current* firing iron is now ready for shipment. With a new, greatly improved transformer, this unit uses *half* the power formerly needed. Only 600 watts! This means you get constant, even heat in barns with old wiring.

You can use the new NICHOLSON electric firing iron and cautery in many simple surgical operations such as removal of warty growths, ear polypi, certain tumors, and in castration or spaying. And, of course, for firing, it is unexcelled. Heat is instant—and constant at any one of the three "heats" you select, 110 v AC. Comes in steel covered case with washable black lining. Supplied complete with 11 tips and points.

Write for leaflet about this superb instrument, or ask your veterinary supplier. Nicholson Manufacturing, Inc. Box 7115, Denver 6, Colorado.

NICHOLSON
precision veterinary equipment



NEW electric dairy cow branding iron available with B, T or V

Here's the neatest, slickest thing in branding irons yet. This new NICHOLSON *electric* branding iron heats in only 90 seconds on regular 110 volt AC-DC current! Just plug it into house or barn wiring. Won't smoke or corrode. Uses the same fast-heating elements they use on the newest electric ranges. Element is formed into 3½" letter B, T, or V. Supplied complete with 6 foot cord for $21.50. Special 25 foot extension cord, $6.00. Prices FOB Denver. All NICHOLSON precision veterinary equipment is guaranteed—money back if you aren't satisfied. We ship mail orders the same day they're received if at all possible. Order your new *electric* branding iron today. NICHOLSON Manufacturing, Inc., Box 7115, Denver 6, Colorado.

NICHOLSON
precision veterinary equipment

CLASSIFIED ADVERTISEMENTS

Twenty-five words or less, $2.50; 8 cents for each additional word. Replies sent in care of the JOURNAL, 25 cents extra.

Remittance must accompany order.

Deadline for want ads 8th of month preceding date of issue.

Names of classified advertisers using key letters can not be supplied. Address your reply to the key letters, c/o JOURNAL of the AVMA, 600 S. Michigan Ave., Chicago 5, Ill., and it will be transmitted to the advertiser.

CHANGE OF RATES

Effective with the January, 1955, issue

Personal Want Ads—$4.00 for the first 25 words and 10 cents for each additional word; 35 cents for use of box number.

Commercial Want Ads—$5.00 for the first 25 words, 25 cents for each additional word.

Wanted—Veterinarians

Veterinarian with practice experience, preferably in hog belt, wanted by manufacturer of veterinary biologicals. Headquarters in Sioux City, Iowa; salary, bonus, car, life and health insurance plans, retirement plan. Address "Box F 10," c/o JOURNAL of the AVMA.

Veterinarian wanted as assistant in Richmond small animal hospital; license in Virginia required. Salary plus percentage. Address "Box F 27," c/o JOURNAL of the AVMA.

Opening for qualified laboratory veterinarian to make vaccine and do diagnostic work. Address P.O. Box 2821, Little Rock, Ark.

Assistant veterinarian wanted for general practice. Address Dr. L. E. Andres, Box 151, Remington, Ind.

Veterinarian wanted to assist in busy small animal hospital; Connecticut license necessary. Excellent opportunity and future for the right man. Give full details in first letter. Address "Box G 7," c/o JOURNAL of the AVMA.

Veterinarian wanted with Missouri license to assist in busy small animal practice. State age, experience, references, and salary expected in first letter. To start immediately; 5-room house, if desired. Address "Box G 8," c/o JOURNAL of the AVMA.

Veterinarian wanted as assistant in large animal practice in eastern Iowa. Address "Box G 9," c/o JOURNAL of the AVMA.

Associate wanted for Maryland small animal practice. Excellent opportunity for aggressive veterinarian for permanent position. Please give full details, education, experience, personal data, salary expected. Address "Box G 11," c/o JOURNAL of the AVMA.

(Continued on p. 43)

(CLASSIFIED ADS—*continued from p. 42*)

Veterinarian wanted to conduct established small animal hospital. Salary and percentage with opportunity to lease with option to buy. Maryland license required; small apartment available. Address "Box G 14," c/o JOURNAL of the AVMA.

Remittance must accompany advertisement

Opening for resident veterinarian on large purebred cattle ranch. Address Mark Cox, Wyoming Angus Ranch, Cheyenne, Wyoming.

Veterinarian wanted as assistant in small animal practice. Address Dr. Alexander Slawson, 2414 Amsterdam Ave., New York 33, N. Y.

Wanted—Positions

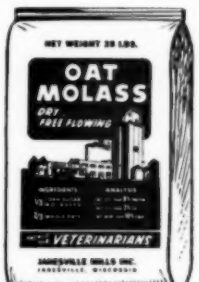
Graduate AVMA-approved school; 2 years of experience in all phases of small animal practice. Licensed in Connecticut and Pennsylvania; 28, married. Interested in interim measure or permanent opportunity. Address "Box G 6," c/o JOURNAL of the AVMA.

Retired veterinary BAI meat inspector available; would like city, county, or state job with privilege to practice. Am registered in Ohio, Tennessee, Mississippi, Arkansas, Georgia. Address "Box G 10," c/o JOURNAL of the AVMA.

(*Continued on p. 44*)

Oat Molass

The new dry, free flowing, highly palatable molasses feed containing pulverized whole oats and corn sugar molasses.



Now available in 25-lb. sacks especially for veterinarians as a carrier for phenothiazine, sodium fluoride, and antibiotics.

Recommended by universities, medical supply houses, and veterinarians.

Oat Molass is cooked, blended, and processed under pressure.

Write for samples, prices, and complete information.

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411 S. Pearl St., Janesville, Wis.
Phone 3371

THE BRITISH VETERINARY JOURNAL

A Monthly Review of Veterinary Science

$6.50 per year

Vol. 111 current in 1955

Sole U. S. Agents:

The Williams & Wilkins Co.

Mt. Royal & Guilford Aves.

Baltimore 2, Md.

Concentration of Livestock in the United States.—Based on the official livestock report of Jan. 1, 1954, there was an average of 18.9 beef cattle, 15.9 hogs, and 10.2 sheep per square mile in the United States. Iowa ranked first in cattle and hogs and second in sheep, with a total average of 290.2 animals per square mile.—*The Cattleman, May, 1954.*

Over 900,000 species of animal life are known, 675,000 of them insects.—*Prairie Farmer, July 17, 1954.*

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in SUPERFICIAL FUNGOUS INFECTIONS OF HIRSUTE SKIN IN SMALL ANIMALS

Exceptionally effective not only as a powerful *antimycotic agent* — but as a quick acting, long lasting *antipruritic agent.*

Trial quantities sent on request.

Pharmaceutical Division
W&T WALLACE & TIERNAN INCORPORATED BELLEVILLE 9, NEW JERSEY, U.S.A.

Available as
DESENEX OINTMENT ZINCUNDECATE
Tubes of 1 oz.
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Bottles of 2 oz. and 1 pt.

PD-42

Laboratory Service for Veterinarians

VETERINARY DIAGNOSTIC LABORATORIES

These laboratories have been established to aid veterinarians in the diagnosis of obscure as well as common ailments in large and small animals. The chief aim of our staff is to give quick and accurate diagnosis at all times.

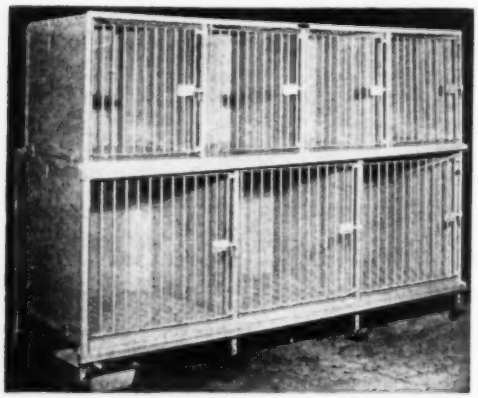
Our service includes fecal examinations, anti-biotic sensitivity tests, urinalyses, blood counts, culture work, tissue sections, skin scrapings, and autopsies, and is designed to assist owners and breeders of stock of all kinds including dogs, cats, horses, cattle, poultry, hogs and sheep.

Sample containers for mailing, and price list on request.

VETERINARY DIAGNOSTIC LABORATORIES

220 East 23rd St., New York 10, N.Y.

DE LUXE CAGES



IMPROVED 7-CAGE DE LUXE DRAIN UNIT

The small size is 7½ feet long with 3-30" cages in bottom and the large unit 9 feet long with 3-36" cages in bottom.

Also available in removable tray style, or plain flat floor style without gutter drains.

Our units are available in 3, 5, 7 or 12 cage units, or any combination you need.

"We don't make all the cages but we make the best."

Write for NEW cage booklet; also DRYER FOLDER

NOTE NEW LOCATION

Baltimore Wire & Iron Works

319 Barrow Street Jersey City 2, N. J.

(CLASSIFIED ADS—*continued from p. 43*)

Graduate of AVMA-approved school desires association with general practitioner in North Carolina with possibility of eventual partnership or will consider immediate purchase of an established practice. Six years of experience and best of references; have some capital. Address "Box G 13," c/o JOURNAL of the AVMA.

Position wanted by lay veterinary helper; fourteen years of experience in mixed practice. Handles large and small animals equally well. Pleasing to clients, unassuming; will travel. Address present employer, Dr. M. O. Nottingham, Summitville, Ind.

Experienced relief veterinarian available; small animals only. New York and New Jersey licenses. Address D.V.M. 1007 80th St., North Bergen, N. J.

Position wanted in the field of small animal practice leading to lease or permanent position. Seven years of experience in small animal practice; licensed in Michigan and Ohio. Address "Box G 15," c/o JOURNAL of the AVMA.

German graduate (Berlin, 1944) veterinarian desires assistantship in a busy practice. Ten years of experience both large and small animals; good English. Address "Box G 20," c/o JOURNAL of the AVMA.

Wanted—Practices

Veterinarian wants to buy or lease active, profitable small animal hospital in California. Give full particulars in first reply. Address "Box F 26," c/o JOURNAL of the AVMA.

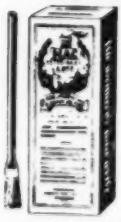
Wish to purchase large animal practice in Wisconsin. Address "Box G 2," c/o JOURNAL of the AVMA.

Want to buy thriving small animal practice in Illinois, Indiana, or Ohio; prefer hospital with adjoining residence or apartment. Address "Box G 17," c/o JOURNAL of the AVMA.

Wanted to lease predominantly small animal practice, preferably with residence included. California only. Address "Box G 22," c/o JOURNAL of the AVMA.

(*Continued on p. 45*)

M·A·C



Quick relief for Bone, Bursal or Tendon Lameness

Single Bottle.....$2.00
3 and 1 free.....5.00
6 and 2 free.....9.00
12 and 4 free.....17.00
24 and 4 free.....28.00

CARTER-LUFF CHEMICAL CO.
Hudson, N. Y.

(CLASSIFIED ADS—*continued from p. 44*)

Two-man small animal practice wanted in Washington, Oregon, or California. Would consider partnership with present owner or outright purchase. Down payment of $15,000 available. All replies guaranteed immediate answer. Address "Box G 21," c/o JOURNAL of the AVMA.

Veterinarian wants to buy or lease active small animal hospital in California. Give full particulars. Address "Box G 23," c/o JOURNAL of the AVMA.

For Sale or Lease—Practices

Busy dog and cat hospital for sale; long-established, lucrative practice on main thoroughfare in built up area Long Island, N.Y. Modern brick hospital, capacity 75. Ill health compels me to retire. Exceptional opportunity, 1 or 2 veterinarians. Address "Box D 5," c/o JOURNAL of the AVMA.

Practice for sale in Chenargo County, New York State; 90% large animals; annual testing and milk plant work available. Ten-room frame house; separate hospital with garage. Address Dr. R. B. Fish, 67 Greenwood St., Canisteo, N.Y.

Thriving small animal hospital for sale in Pennsylvania city of 100,000; established 30 years at intersection of main highways. Brick hospital, adjoining two-story brick dwelling. Tiled floor kennel room and examining room; 80 tile cages; outdoor mason runs, large lot for parking; cyclone fence around property. At present one man can operate but rapidly becoming a two-man practice. Address "Box G 1," c/o JOURNAL of the AVMA.

Fully equipped small animal hospital for sale in northeastern New York State; desirable location, excellent income. No real estate and good lease obtainable. Health forces sale. Address "Box G 3," c/o JOURNAL of the AVMA.

Old-established, mixed practice for sale in central Indiana; new hospital and apartment. Will sell for value of real estate. All inquiries answered confidentially. Address "Box G 5," c/o JOURNAL of the AVMA.

Columbus, Ohio, small animal practice and hospital of Dr. James B. McNamara for sale; located for 20 years in the most densely populated area of this city. The hospital is in rented property, therefore no lease or real estate involved. Dr. McNamara died November 5. Excellent opportunity; complete details on

(*Continued on p. 52*)

BROKEN TEETH

—repaired in bottom clipper blades. Top and bottom blades sharpened to match. Save money—Guaranteed. Prices on Request

HIGHLY SPECIALIZED SHARPENING

Sales—Repairing on Oster and Stewart clippers.

Sharpened Blades Tested on Rabbit Fur

OSTER A 2 $.75 STEWART ST 00

Prompt Service—Est. 17 years

MAIL TO

CLIPPER SERVICE OAK RIDGE NEW JERSEY

p/d RICH IN HIGH QUALITY ANIMAL AND CEREAL PROTEINS

DIAGNOSIS

A three months old pup for distemper vaccination. Fecal examination—hookworm (3 plus), red blood cell count 3,000,000. Dog is underweight and growth is retarded.

TREATMENT

Administer serum, prescribe p/d 50 calories per body pound daily, treat for intestinal parasites one week later and proceed with immunization when patient is in satisfactory condition.

SCIENTIFIC BASIS FOR PROCEDURE

Antibodies are developed from amino acids made available from high quality dietary protein.

(Inquiry form for graduate veterinarians only)
HILL PACKING COMPANY, Box 148, Topeka, Kan.
Send information on therapeutic feeding ☐
Send information on other Hill products ☐
NAME.....
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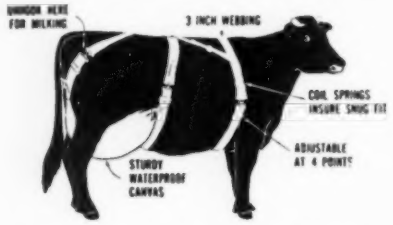
HILL PACKING COMPANY
P.O. Box 148 Topeka, Kan.



Veterinarians, you can now eliminate congestion or caking, broken down udders, smashed teats, and self-sucking by using

TAMM UDDER SUPPORTS.

The sturdy, waterproof canvas udder cover is ideal for medicated baths or ice packs and will retain body temperature indefinitely. The harness is made of durable 3-in. webbing adjustable at four points and equipped with springs for a snug fit.

Available in four sizes

extra small, heifers, 900 lb. or less; *small*, 900-1,100 lb. cows; *medium*, 1,100-1,600 lb. cows; *large*, cows over 1,600 lb.

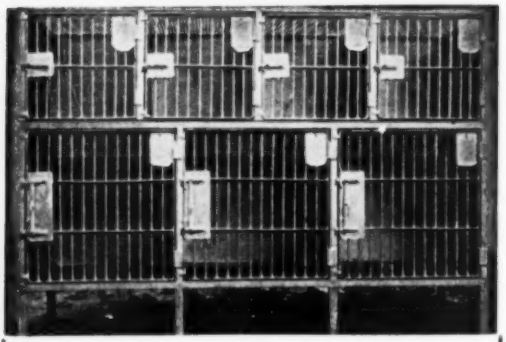
Price, $17.50 retail, prepaid.

30% Professional Discount

Write for literature and complete information.

FRANKSVILLE SPECIALTY CO.,

Dept. V-12, Franksville, Wis.



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MANUFACTURED IN 5, 7, AND 8, CAGE UNITS. EQUIPPED WITH BALLBEARING CASTERS AT NO EXTRA COST. MINOR CHANGES IN DESIGN OPTIONAL. SLIDING PANELS BETWEEN CAGES IF DESIRED. STEEL-BARRED DOORS AND ESCAPE-PROOF LATCHES. NEW TYPE DOOR FRAMES WILL NOT COLLECT DIRT. VENTILATING STRIP IN LOWER CAGES. GALVANIZED STEEL USED.

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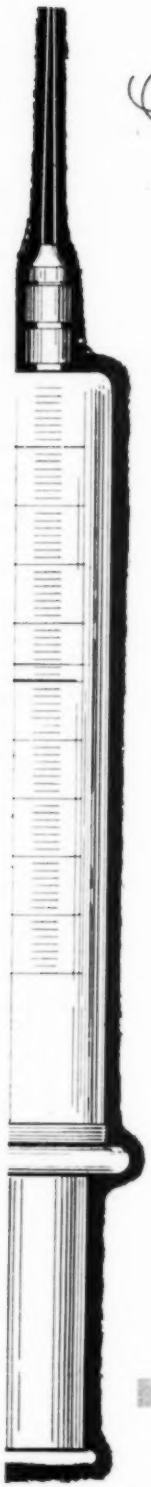
SALES TO GRADUATE VETERINARIANS only



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Modified Live Virus Hog Cholera Vaccine

Anti Hog Cholera Serum

Erysin
(Erysipelas Bacterin)

Canine Distemper Vaccine
(Modified Live Virus-Chick Embryo Origin)

Adhep Infectious Canine Hepatitis Vaccine
(Tissue Origin)

Bival Sera
(Anti-Canine Distemper Serum and Anti Infectious Canine Hepatitis Serum)

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SOLUTION
OPHTHAINE
Squibb Ophthalmic
Anesthetic Solution
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OPHTHAINE*

veterinary

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new! **safe, efficient, non-irritating**

Solution Ophthaine Veterinary instilled into the eye produces local anesthesia in a quick, efficient manner.

In addition, it has been shown to be virtually free of undesirable side effects. It is non-irritating to conjunctival membranes.

Ophthaine is a sterile aqueous solution containing 0.5 percent of the active ingredient, 2-diethylaminoethyl-3-amino-4-propoxybenzoate hydrochloride.

Supplied in 15 cc. dropper bottles. Available from your veterinary supply house. For further information, address: E. R. Squibb & Sons, *Division of Mathieson Chemical Corporation,* Dept. JA-12, 745 Fifth Avenue, New York 22, N. Y.

*OPHTHAINE is a trademark.

A NAME YOU CAN TRUST

Correspondence

September 18, 1954

Dear Dr. Hardenbergh:

I am attaching a newspaper clipping with regard to a local M. D., Dr. James J. Griffitts, who was elected president-elect of the American Association of Blood Banks. I am sure you will find it interesting as Dr. Griffitts is the author of that exceptionally fine article "The Physiological Basis for the Transfusion of Blood" which appeared in the Miami Beach 1950 (Miami Beach Meeting) AVMA Proceedings Book.

I mentioned at the time that this article would be the number one standard blood transfusion reference in veterinary literature for many many years to come. It seems that very recently some members of our profession are beginning to discover this fine work.

Sincerely yours,
s/Charlie Bild, D.V.M.

October 5, 1954

Dear Dr. Aitken:

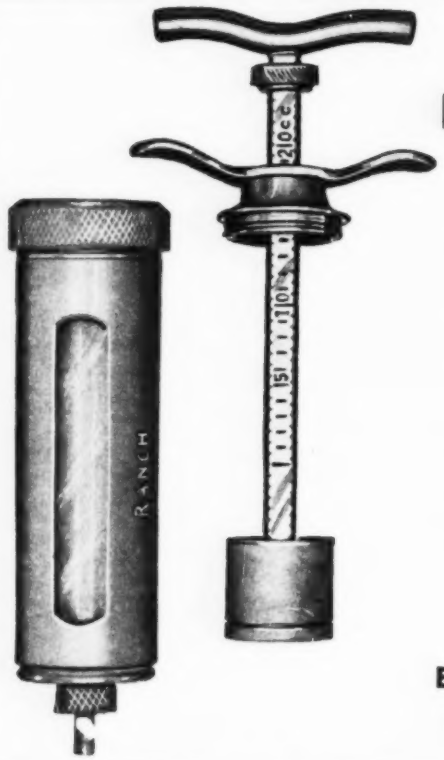
Over the past year I have had some interesting correspondence with Dr. Jen Hwang, associate professor of animal husbandry and veterinary science of the National Taiwan University, Taipei, Taiwan, China.

In a recent letter from Dr. Hwang, he included a paragraph of appreciation of Dr. Newsom which I am enclosing. You will recall that Dr. I. E. Newsom spent a year on Taiwan surveying the animal disease problems for the government. He later prepared a very valuable report of his observations.

Sincerely,
s/William H. Feldman, D.V.M.

Following is the paragraph from Dr. Hwang's letter — ED.

"The sad news of the past over of the late Dr. Newsom has reached here quite a long while ago from Mrs. Newsom. It is a great loss to us and the profession at large. Dr. Newsom had been helping us in improving our veterinary education and service for about a year. His excellent service and personality will be immortal among the veterinary profession in this Island. We are planning to establish a library as an immemoriam of him as soon as our clinic building is finished. We are keeping contact with Mrs. Newsom about this matter. I am sure you will be glad to hear what we are doing for him."



NEW IMPROVED RANCH RECORD VETERINARY SYRINGE

The Ranch Syringe was improved lately with a new two piece top cap. The plunger can be removed for sterilization without removing the glass barrel from the metal frame. This improvement makes it easier to sterilize and eliminates breakage. Smooth operation and accurate dosage is assured at all times.

The Ranch Syringe is made with finger bars or three rings.

Inquire at your nearest veterinary dealer or wholesaler about this new improved outstanding product.

Sizes 2cc. to 40cc.

Literature Upon Request

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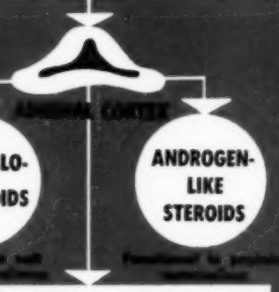
50 Thayer St., Boston 18, Mass.

acb 12



Compound E-Like and F-Like Hormones
(gluco-corticoids)
Physiological agents that control the mobilization and utilization of energy, inhibit cellular injury and the concurrent inflammatory reactions common to a wide variety of canine diseases.

Exogenous crystalline Vitamin B_{12}

Aids the re-establishment of neuro-muscular function, acts as an analgesic to relieve the pain in neuritis through pathways as yet undetermined.

Blocks development and progression of nervous symptoms in most instances.	CONTROLS NERVOUS SYMPTOMS
Alleviates pain—especially neurological in origin.	INHIBITS PAIN
Elevated temperatures tend to return to normal within 4-18 hours.	DEPRESSES FEVER
Irrespective of cause	CONTROLS INFLAMMATORY REACTIONS
Cannot be accounted for entirely by relief of pain and discomfort.	IMPROVES SENSE OF WELL-BEING
Simplifies lack of appetite problem.	IMPROVES APPETITE

FORMULA

A *LONG-ACTING* preparation designed for Veterinary use:

Each cc. contains

ACTH .....30 AVU*

Crystalline Vitamin B_{12} .....1000 mcg.

in 16% gelatine with 0.5% phenol.

***ARMOUR VETERINARY UNIT**
Each unit provides the physiological response equivalent to 1 U.S.P. unit or 1 I.U.

Clinical trials showed an improvement in neurological status, or recovery in a large percentage of cases not amenable to other forms of therapy.

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2. Complications of the distemper syndrome, including:
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(CLASSIFIED ADS—*continued from p. 45*)

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(*Continued on p. 54*)

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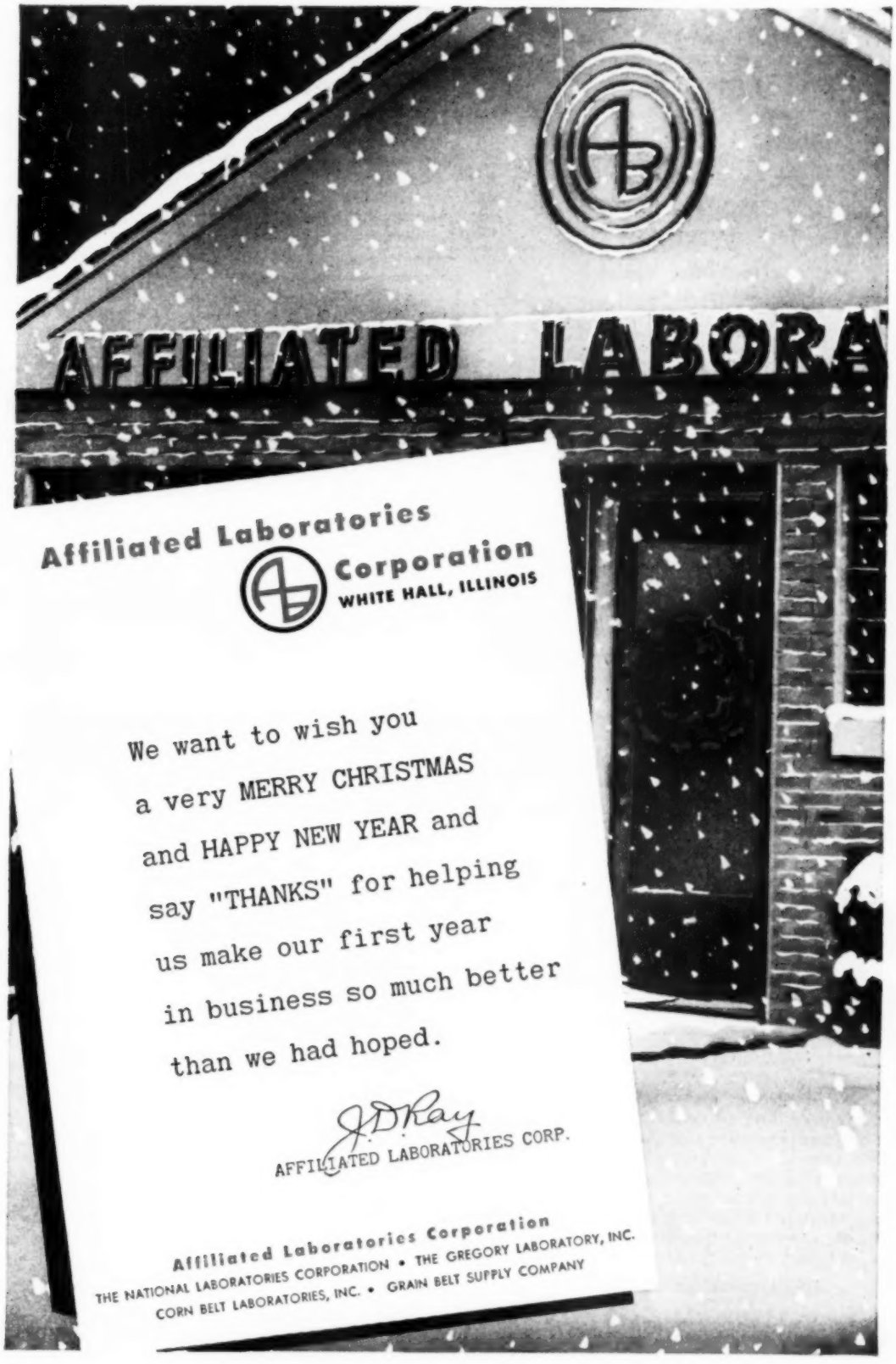
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(CLASSIFIED ADS—*continued from p. 52*)

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(*Continued on p. 56*)

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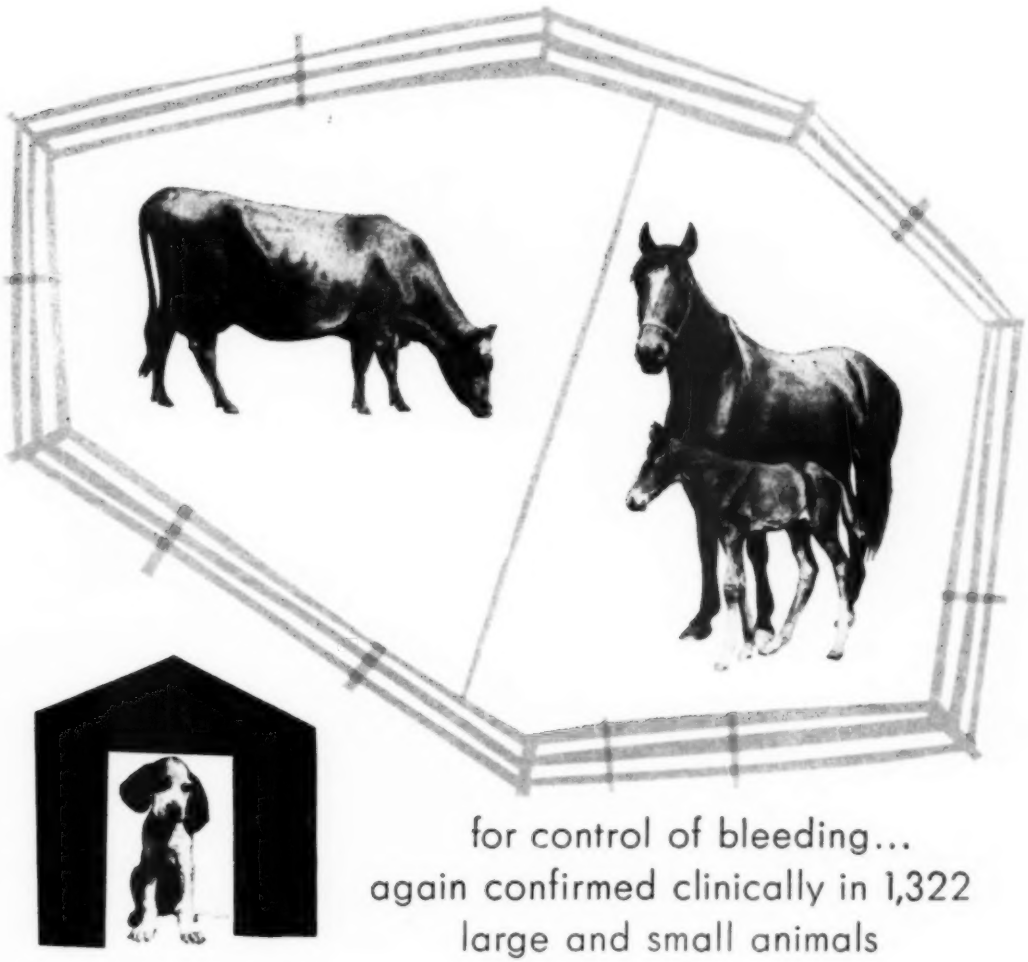

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*Rachman, M., and Frucht, T. R.: Vet. Med. *49*:341, 1954.

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(CLASSIFIED ADS—*continued from p. 54*)

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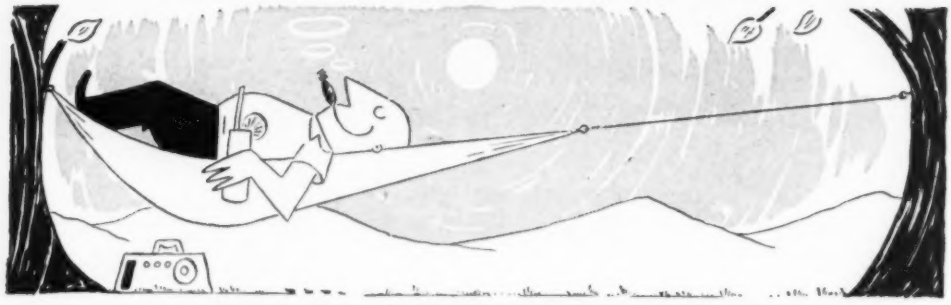

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